UNIVERSITY OF CAPE COAST

THE USE OF INFORMATION COMMUNICATION TECHNOLOGY FOR STUDENTS' INFORMATION MANAGEMENT IN ACCRA TECHNICAL UNIVERSITY OF GHANA.

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BY

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DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my original research and that no part of it has been presented for another degree at this university or elsewhere.

Candidate's Signature: …… Date…….....

Name: Freda Awonakie Akwetey

Supervisors' Declaration

I hereby declare that the preparation and presentation of the thesis were supervised by the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature……Date……

Name: Prof. Marie A. Bakah

ABSTRACT

The study investigated the use of ICT in students' information management at the Accra Technical University. Specifically, the study explored the internal guidelines for Accra Technical University in Ghana's usage of Information Communication Technologies (ICTs) for student information management, examined the types of ICT platforms employed at Accra Technical University for student information management, how ICTs are used to manage student information at Accra Technical University, and the challenges confronting the Accra Technical University of use of ICT for student information management. The qualitative approach and the explanatory-descriptive research designs were employed. A total of 13 participants (Administrative staff) of Accra Technical University participated were sampled for the study. A semi-structured interview guide was used to poll the views of the participants. The data was thematically analysed. The findings of the study revealed that the Accra Technical University adopt several internal guidelines and policies that regulates students' information management. Also, the Accra Technical University, utilizes various ICT platforms such as learning management systems, Student Information System, the School Management Information Systems, Electronic Portfolios, and the Student Response System online platform. The findings of the study revealed ICTs plays significant roles in students' information management. Notable among them are: it enhances speed and accuracy of collection and management, saves storage time and space, minimizes error in data collection and losses. The study recommends that ATU invests into training of its Administrative staff on ICT usage as well invest more into data security.

KEYWORDS

Students Information

Higher Education Institutions

Information Communication Technology

University Administrators

Information Management

Technical University

Performance

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DEDICATION

To my mom, Madam Felicia Amanor.

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CHAPTER ONE

INTRODUCTION

Background to the Study

Students' information management, often known as student records management, is critical to the effective and efficient administration of higher education. (Frimpong, 2019). It is crucial in educational institution administration because it documents the planning and execution of relevant service evolution, allowing for proper monitoring of the entire educational system (Adade-Boafo, 2018). As a result, one of the gravest concerns confronting higher education institutions around the world is the efficient and effective management of students' data.

According to Asogwa (2013), existing students' information management traditions in some higher education institutions are not receptive to the contemporary higher education system, which is characterized by extensive technological advancement and development, and thus may be unable to launch organizations to their full potential. Notwithstanding, failure to appropriately address the evolving information management problems of students has a negative impact on the growth of these organizations (Bigirimana, Jagero & Chizema, 2015). As a result, many higher education institutions have suffered financial losses, low academic performance, employee dissatisfaction, student loss, and public trust erosion (Chidobi, 2015).

Poor student information management has presented itself in a variety of ways, including a failure to communicate among institution officials, academic professionals, students, and other interested parties (Mugobi & Mlozi, 2021). This breakdown frequently results in predicaments that

frequently lead to student unrest and property damage that could be avoided if accurate and timely student records were available, a product of effective integration of Information and Communications Technologies (ICT) into students' information management processes (Juma, Abas & Banu, 2016) According to UNESCO (2011), the rapidly rising student population in higher education institutions has accelerated the need for ICTs to process, store, and retrieve information in a timely, logical, and precise manner. In Ghana, the number of people enrolling in higher education institutions has increased considerably in the last nine years, mirroring global trends (UNESCO, 2017).

According to UNESCO (2017), in 2005, there were 41,783 students enrolled in higher education in Ghana; however, the most recent data shows that the number has climbed to 157,626 in 2014, more than doubling in less than a decade. According to UNESCO (2017), worldwide enrolment in higher education has gradually expanded, with the total number of learners in higher education institutions more than doubling from one hundred (100) million to two hundred and seven (207) million between 2000 and 2014. The necessity to control this growing learner numbers and control their progress within the educational system demands that higher education institutions administrators turn to ICTs solutions to manage students' information effectively. Also, the efficacy and potential of ICTs is an indication technology can afford opportunities that hitherto were not in existence a few decades ago.

Subsequently, the use of Information and Communication Technology (ICT) in education has grown in popularity in recent years, having a significant impact on how higher education institutions conduct their operations (Sherifi, 2015). Not only in the teaching and learning processes, but

also in the monitoring of students' development. The accumulation, treatment, storage, or retrieval of data is classified as information technology (Sherifi, 2015). In broad terms, ICT emphasizes the role of communication in modern IT, particularly in the spread or transmission of data from one location to another over a long distance.

Abykenova, Assainova, Burdina, Murphy and Abibulayeva, (2016,P6) defines ICT as "a term used to define an array of hardware apparatus, computer software, and telecommunication infrastructure that allow access, retrieval, storage, organization, manipulation, presentation, and sending of materials both domestically and internationally via digital media." Additionally, Iivari, Kinnula and Kuure, (2015), defined ICT refers to computer technology as well as other technologies utilized in the acquisition, storage, management, and transmission of data. Bayangan-Cosidon (2016) posits that ICT is a collection of high-tech gadgets and resources used to connect, generate, disseminate, store, and govern data. As Chawinga and Zozie and Chawinga, (2018), point out, Information and Communications Technology is essential for increasing efficiency and developing knowledge-intensive services and goods, which is the primary goal of any nation on the planet, since it presents nations with endless prospects for success.

A range of industries, including manufacturing and healthcare, have embraced ICT to better their day-to-day operations (Tay & Lim, 2013). Information and communication technology's powerful ramifications have also altered the world of education. According to Asogwa et al. (2015), ICT has the ability to accelerate, improve, and intensify skills, stimulate and occupy learners in pedagogy, aid in relating educational familiarities to job practices,

contribute to revolutionary institutional developments, support instruction, and provide opportunities for link between the institution and the real world. More so, Frimpong, Nukpe and Agyekum, (2020), encapsulated, that when used wisely, ICT has a wide range of pedagogic prospects and a high possibility of changing the pedagogical situation.

In educational settings, ICT adoption begins in preschool and continues through higher education. ICT has explicitly re-demarcated educational objectives, research and data sourcing, student record management, and correspondence between academics, students, and other stakeholders in higher education institutions (Lupu & Laurenţiu, 2015). As Asogwa et al., (2015), puts it, as the use of ICT in institutions makes management and instruction more accessible, time-consuming, and cost-effective, higher educational institutions, like Ghana's Accra Technical University (ATU), are attempting to incorporate ICT values.

Accordingly, employees, and students are among the functions that university administrators handle, as is the university's general management. The administration of students' activities comprises a wide range of tasks, from data input to instructional tasks to the handling and distribution of students' discoveries. These managerial operations have been shown to benefit considerably from the use of ICT (Devanandan & Lakshmi, 2018). Hence, the amalgamation of information and communication technology into this practice increases the entire admittance undertakings of universities by making it available to all.

Again, ICT use and administration of students' academic records in TUs could become an antidote to offering practical solutions to student

information management challenges that would otherwise be difficult, if not impossible, to solve. According to Asogwa, Ugwu and Ugwuanyi, (2015). ICT helps students manage their data. It is of no surprise, Saxena and Hew, (2016) admits that, academic institutions have utilized ICT to deal with the massive amounts of data created by businesses. Additionally, Nisiforou and Zaphiris, (2020) highlighted the importance of student information to academic institutions. Their study indicated that, for successful planning and management of the tertiary educational system, faculty, institutional planners, and administrators require sufficient and trustworthy data of learners' enrolment as well as students' school records through the use of ICT. There is no doubt that the management of the Accra Technical University (ATU) has become more complex, and that student information management has become more important as a result (Ampofo, 2020).

Withal, the massive upsurge in the number of learners in the Technical Universities, as well as the multiplicity of programmes, has led to the management of large volumes of information that must be accessed speedily to afford information for effective management and decision-making processes (Takyi, Azerigyik, & Amponsah, 2019). Nonetheless, Acquah, (2021) encapsulated that, the use of ICT for student information management has grown critical at ATU. Students' information is also required during institutional evaluation activities in order to make a decision about the institution and provide pertinent reform proposals.

Only correct information systems can provide recommendations and academic transcripts of graduates/learners, which are regularly requested by companies and other institutions. It may be an exaggeration to say that student

information management difficulties are commonplace across the educational spectrum (Mondal & Mete,2012). Nonetheless, it is becoming clear that these concerns are growing more prevalent in the higher education system as a result of the generation of accurate, consistent, and dependable records that meet evidential needs, but they are not properly handled. (Bayangan-Cosidon, 2016). As a result, governments, guardians, learners, individuals, and organizations are all concerned about this. Subsequently, attempts in the past to improve the situation in many higher education institutions by introducing technology and internet services, as well as the creation of a database, did not appear to have helped the situation much, as the information management systems remained orthodoxly paper-based and labor-intensive. (Martínez, Armenta, & Gastelú, 2015).

Administrative task routines can be enriched by university records in terms of resource acquisition and utilization, fiscal administration, expansion of instructional programs, and the preservation of an active interaction relationship with their community and other external agencies (Gürkut & Nat, 2016). Individuals who make up an institution are more likely to behave appropriately if they are aware that information about them is stored, which helps the establishment advance and maintain order (Mittal, Prakash, & Pegu, 2014). The effective and efficient administration of any higher educational system hinges on the management of student information (Mittal, et al., 2014). It is critical to university administration because it records the scheduling and execution of a suitable sequence of services that allows for proper task monitoring (Healey, 2014). Generally, information management should be

guided by some amount of privacy, adequate preservation, safety, content and setting conservation, and so on. (Caputo, et. al, 2022).

Chidobi (2015), stated that the field of information management has advanced significantly in the last two decades as a result of the development of modern ICT. Integration of ICT in institutional tasks is widely acknowledged, but not completely appreciated, as vital for enhanced efficiency, cost-effectiveness, and competitiveness. It was stated that the use of ICT is critical for the gathering of student data, recording of student results, and maintaining effective student records. The generation, storage, retrieval, maintenance, disposition, and use of compact and other manual or electronic means are all part of information management (Chidobi, 2015). It has also been acknowledged that the monitoring and evaluation of staff, physical planning, curriculum development, financial management, and information dissemination will increase the efficiency of the universities if ICT facilities are adequately utilised (Nwaomah, 2015).

While Ngozi (2022) among other researchers delved into the role of ICT in making pedagogic processes more effective in higher education institutions, as well as the challenges that come with successful integration, little attention has been paid to the use and management of students' information using ICT at the Technical University level. As a result, the purpose of this research is to explore the use of Information Communication Technology in student's information management in Accra Technical University in Ghana.

Statement of the Problem

Prior to the conversion of Polytechnics to Technical Universities, the majority of these polytechnics made use of the manual system for managing students' information (Frimpong et al., 2020). Students' information management aims to manage the lifecycle of data created on a regular basis as a result of an institution's activities and dealings in an effective and rigorous manner (Chidobi, 2015). It is worth noting that, majority of higher education institutions are continually implementing integrated student information management to better their decision-making processes and service levels. The inability of multidimensional higher education institutions to successfully manage students' information is commonly thought to be at the basis of their issues (Gala, 2016).

The handling of students' information in tertiary institutions has gotten easier and more efficient as a result of ICT usage. Withal, ICT has brought about change and proficiency in the way various administrative tasks are handled (Abas, Yahaya, & Din, 2019). It has changed the way information is handled, kept, and regulated, making record keeping, document management, clerical work, and other tasks easier. It has also improved data transfer, allowing information about organizations including higher education institutions to be efficiently sent around the world (Poon, 2013). It has also made school admissions less stressful, as students can now utilize ICT to process admissions, pay fees, register, and conduct a variety of other tasks. Just to mention a few, there are numerous examples of ICT's good effects on school management services.

Accra Technical University appears to be underappreciating the benefits of ICT use, especially given the paucity of basic utilities seen in many of these institutions (Frimpong et al., 2018). As a result, it is necessary to assess the usage of ICT in Accra Technical University for student information management. This research aims to help record managers understand the value and effectiveness of using ICTs to manage students' information, including candidates, enrolled students, and past students, in order to ensure their security, reliability, and accessibility to authorized users for as long as Accra Technical University requires (Frimpong et al., 2018)

Leveraging on the findings of other researchers and the overarching benefits delivered from ICT use. It has come to the realization of the researcher that; little research has been conducted into the use of ICT for students' information management. It is against this backdrop that, this study seek to explore the use of ICT for students' information management in Accra Technical university.

Purpose of the Study

The purpose of this research is to examine the use of ICTs for student information management at Accra Technical University.

Research Questions

1. What are the internal policies governing the use of ICTs for students' information management in Accra Technical university of Ghana?
2. Which ICT platforms are used for students' information management in Accra Technical university of Ghana?
3. What are the roles of ICT in students' information management in Accra Technical university of Ghana?

4. What challenges confront the use of ICT in students' information management in Accra Technical university of Ghana?
5. What strategies can be put in place to harness the use of ICTs for students' information management in Accra Technical university of Ghana?

Significance of the Study

The findings could help educational authorities develop rules for incorporating digital literacy into educational training manuals. As a result, university administrators' effectiveness in terms of student information management may improve.

The current study indicates that Accra Technical University students' information management strategies are ineffective. It's an evaluation of the existing condition of student information management with the purpose of suggesting ways to improve students' information management practices at Accra Technical University. As a result, it is reasonable to anticipate that the research will benefit all stakeholders, including students, lecturers, alumni, administrators, and other institution personnel.

It is a contribution to knowledge to individuals who have access to the findings and recommendations may benefit from it and thus, enhance their ICT skills and performance. Additionally, policy makers may use the findings in policy formulation, developing tools and advocacy of interventions to enhance the use of ICT tools in the administration of their daily activities. Further, the findings may also be of importance to the university administrators and policy makers to identify the types of ICT tools and

policies employed by administrators and the challenges that they face when using digital tools and find ways and strategies in managing the problems.

Furthermore, the findings may also be useful to aspiring administrators in the future to acquire skills and knowledge in digital literacy so as to understand their administrative roles and carry them out effectively and also benefit Accra Technical University since the findings will clarify the murky domains of students' information management systems in institutions and raise awareness about how students' information is managed effectively and efficiently utilizing ICT. Finally, the significance of this study lies in the fact that it would hopefully contribute to the research literature on the subject of ICT and students' information management.

Delimitations

The study examined the use of ICTs for students' information management in Accra Technical university of Ghana and addresses information security challenges and enhance the credibility and sustainability of students' information. The study however restricted to the Accra technical University among other Technical Universities in the country. The study also, delimited to ten out of sixteen departments in Accra Technical university.

The justification for selecting Accra Technical University of Ghana is that, is the oldest and leading among the technical universities. ATU has transited from Technical Institute through to a Polytechnic then to a Technical University (MOE, 2019). Hence, they are expected to be able to provide the researcher with the necessary information for the study since they have been in existence since 1949 and have been active in student information management

for quite some time. As a result, ATU is deemed relevant for the purpose of this study and reasonably close in terms of proximity.

Definition of Terms

i. Administration – refers to the management of public affairs.
ii. Administrators – refers to person who dispense or administers something
iii. Communication- means imparting or exchanging of information by speaking, writing, or using some other medium
iv. Technology- is the application of scientific knowledge for practical purposes, especially in industry.
v. Management: is the process of dealing with or controlling things or people.
vi. Efficiency – is the act or condition of producing desired results without waste.
vii. Information – refers to the knowledge communicated or received concerning a particular fact or circumstance.
viii. Manipulate – to control, manage or handle a situation, a device or someone.
ix. Performance – the action or process or undertaking a task or assignment.
x. Technical University – a high level educational institution or tertiary education that specializes in *engineering*, *technology*, applied science, and natural sciences where students' study for degrees and academic research is done.

Organisation of the Study

The study is organized into five chapters. The Chapter One dealt with the introduction of the study. This comprises the background to the study, statement of the problem, purpose of the study, significance of the study, delimitation, limitation, definition of terms and Organisation of the rest of the study. and research questions.

Chapter Two focused on the review of related literature on the constituent(s) of the use of ICT in students' information management. Documents both published and unpublished such as books, journals, newspapers with relevant information on the topic are reviewed in the following areas: the concept of ICT, student information management, Types of ICT Tools, importance of ICT usage, problems associated with the use of ICT tools, strategies to improving ICT usage in student information management. A conceptual framework that explains the key concepts and variables of the study, Theoretical framework that explored some theories that underpins the study and an empirical review on what other researchers have done on the study.

The Chapter Three of the study is methodology. It follows the following pattern: research design, population, sample, instruments, pilot testing, procedure for data collection and data analysis procedure. Chapter Four consists of the findings and discussions, as well as the summary of the findings. Chapter Five is the final part of the study and it is devoted to the major findings, conclusion, recommendations and suggestions for further research.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This section is dedicated to the study of similar studies conducted by other researchers on the research topic with the goal of examining what they have done and have not done to resolve the issue at hand. It also presents the spectrum of studies the use of Information Communication Technology on students' information management. The review is organized under the following subheadings:

- The concept of student information in tertiary education institutions
- The concept of Information Management
- Uses of students' information or records.
- ICT Policies in Tertiary Institutions
- ICTs and Management of Students' Information
- The role of ICT in Effective Management of Students' information in tertiary education institutions.
- Access to information and records
- Management of Students' Information/Records
- Student Information and Records Management Practices
- Theoretical Framework
- Technology Acceptance Model (TAM)
- The Theory of Planned Behaviour.
- Empirical Review
- Challenges mitigating the usage of ICTs in students' information management

- Existing Policies measures, instruments and initiatives
- Chapter Summary

Conceptual Review

The concept of student information in tertiary education institutions.

Students' information, often known as records, is a valuable asset that must be properly managed and safeguarded. Records serve as a guide for current and future institutional decisions and activities. (Egoeze et al., 2018). Additionally, Atulomah, (2011), recognizes that student information or records serve an important role in institutions by providing evidence and information concerning student-institution transactions.

Records provide a framework for institutions to be held accountable for their actions and, as a result, serve as a basis for the construction of institutional memory. Subsequently, Frimpong, Nukpe and Agyekum, (2020), previously stated, records are critical instruments in the operation of institutions, and their absence could result in inadequacies or failure in everyday operations. As a result, without information, it is impossible to determine whether institutions have carried out their responsibilities and commitments. It's also impossible to say whether their activities and interactions match the standards of competence, acceptability, or good governance ethics, or whether they've done anything that shouldn't have been done (Abdulrahman, 2015).

Withal, Nwaomah, (2014) indicated that, institutions can use records and the proof they contain to foster a faith-based environment and put a general onus on students. Students' records must be exploited as key resources for universities through proper records management techniques. Correct

information management is the cornerstone for accountability, transparency, good governance, poverty reduction, dishonesty elimination, and the judicious use of limited resources (Nwaomah, 2014)

Mokhtar and Yusof, (2016), posited that, the implementation of efficient internal controls at each point of the record's life cycle, along with customary codes and recognized records management models, is part of proper information management. Furthermore, proper information management in an institution will ensure that records containing collective knowledge are stored in a recordkeeping system so that the information they contain can be retrieved and shared within the institution as needed (Mukred, Yusof, Mokhtar & Manap 2016). Major and Omenu (2016), said that, the proper archiving of students' information and the appropriate provision of information enable students to exercise their rights by providing them with information and data they may use to hold educational institutions responsible.

Nonetheless, providing dependable, precise, and verifiable data also aids in the detection and avoidance of fraudulent transactions that risk higher education institutions' ability to provide efficient and effective services (Frimpong, 2019). As a result, student data must be carefully managed in order to offer the verifiable proof needed to support institutions, fulfil their mission to their clients (students), and defend the institution's essential values (Frimpong, 2019)

Nengomasha, (2013), infer that institutional openness and accountability are achieved in the end by providing students with accurate access to information, which can only be accomplished through efficient records management. However, records, which are considered the most

important basis of student information, have only lately begun to be managed as a strategic resource, due to ongoing storage and retrieval issues (Nengomasha, 2013).

Students' information management has not been integrated or recognized as a strategic management function in most institutions with other data managing activities (Major & Omenu 2016). This circumstance makes it difficult for institutions to carry out their economic and administrative restructuring plans, which are intended to improve productivity, liability, and student services. (Frimpong, et. Al, 2020).).

As pointed out by Mokhtar and Yusof, (2016), there is no universally accepted definition of the term record. As a result of the many definitions of the phrase, there has been misunderstanding, which has influenced the design of a notion to support it. The definition of the term record evolved from an archival perspective to a management perspective to an information technology perspective, resulting in changes in the status of records. Some explanations are based on the records' function, while others see records as physical things that will be passed down through generations. As a result, any original definition of the term record must take into account the elements of a record, which include the information, the medium, and the function (Mokhtar, & Yusof, (2016). Erima and Wamukoya (2012), outlined that, in the beginning, conduct, or completion of an official or individual undertaking, a record is defined as recorded information that includes content, context, and scheme that are sufficient to provide proof of the undertaking.

Ambira (2017) mentioned that, records are defined as any data generated, received, and preserved as proof by an establishment or individual

in the performance of legitimate tasks or the conduct of business. Kalusopa and Ngulube (2012), defined record is proof of an activity made by an individual or a corporation throughout their daily operations that leads to a certain conclusion.

According to Agrahari and Singh (2013), records can be delivered in any format and across several mediums. Most businesses keep a mix of records, with some on paper and others in digital format. Records are extensions of human memories that are purposefully created to chronicle facts, record occurrences, convey opinions, verify claims, provide advance notice, provide explanations, and provide permanent witness of activities (Agrahari & Singh, 2013). Their creation is the result of a fundamental human drive to create and preserve material, retrieve and disseminate it, and establish real linkages with the past (Akor & Udensi, 2013).

Consequently, as inferred by Atulomah, (2011) Organizations use records in their day-to-day operations to enable them to make decisions and take actions. Records provide access to techniques and strategies, as well as evidence of what has been accomplished or addressed in the past. Institutions can use records to defend themselves from deceit and to maintain human rights and assets. When institutions are expected to certify that they have met their responsibilities to their clientele, in this case, students, they use records to encourage accountability (Mokhtar & Yusof, 2016). Furthermore, records serve as a liability tool by providing the essential proof for stakeholders to account for their decisions and activities and to comply with legal and policy requirements (Nengomasha, 2013).

Records can also be used for cultural determinations in order to increase knowledge and understanding of an organization's history. According to Franks (2013), the larger community also expects institutional transparency, the protection of rights, and the preservation of sources for shared memory. Records are more than just data; what sets them apart from other types of data is that they are created as a result of a unique venture or activity and may thus serve as proof of that action (Yakubu et.al, 2017).

From the foregoing debates on student information or records, it is evident that student information management lack a precise definition. Furthermore, student information management can be defined as all data about individual students provided to tertiary education institutions. Their names, age, and religion are frequently included in the information. To name a few, address, prior or educational qualifications. Other researchers stated that managing pupils' information for future reference is critical. However, it is clear from the review that the majority of researchers believe that there is a need to maintain student information effectively and efficiently.

The Concept of Information Communication Technology (ICT)

Information and Communication Technology (ICT) has swiftly become one of the most important structures of modern civilization. (Shamshina, & Labeev, 2018). Hence ICT is a more precise term that stresses the role of merging communications as well as the integration of telecommunications, computers, and the essential software, middleware, storage, and audio-visual systems that allow users to access, save, move, and manage information (Bladergroen et al., 2012).

To Chitla (2012), accessing, collecting, manipulating, displaying, or sharing information is generally referred to as ICT. Hardware, software applications, and communication may be included in these technologies. As a result, ICT is a combination of hardware, software, telecommunications, and the internet that allows people to produce, collect, consolidate, and share information in multimedia formats for a variety of uses (Chidobi, 2015). In other words, information and communication technology (ICT) is a broad term that refers to the processing, storage, and transmission of data using computers and telecommunications technology in the information handling and application business (Olawale, et. al, 2013).

ICT can help to improve universal access to learning, institutional equality, the delivery of high-quality pedagogy, educators' professional development, and education administration, governance, and management. (Chidobi, 2015). Subsequently, UNESCO (2017) admits that, when it comes to promoting ICT in education, ICT takes a holistic and broad approach. ICT in education refers to society's efforts to teach valuable information and skills about computing and communication devices, including the software that runs them, the programs that run on them, and the structures that they contain. Many people are perplexed by ICT since it is diverse and continuously changing (Reddy, Sharma, & Chaudhary, 2020). Since it's so widespread in today's environment, most people understand what it is; nevertheless, many of these assumptions are inaccurate.

The Con++cept of Information Management

According to Nayak and Rao (2014) Scientists, practitioners, managers, and others in most organizations use information to make critical

decisions about their strategy and day-to-day operations in order to stay ahead of the competition, conduct cutting-edge research, provide adequate services, and so on. Information must be effectively managed, whether formal or informal. In numerous organizations, information is now regarded as a valuable resource. It's seen as a useful resource for the company. Everyone can obtain information from anywhere, as frequently as they like, and it will remain unaltered and unreduced; yet, this requires a thorough use of information technologies (Nayak & Rao, 2014)

Consumers approach information providers directly for their needs, as government financing is declining. Data (both external and internal) is treated and handled without professional aid in the commercial, academic, public, and other sectors. Chatterjee and Maity (2019), defines records management as a domain of management responsible for the effective and efficient regulation of the creation, receipt, preservation, usage, and disposal of records, as well as procedures for obtaining and preserving proof of and information about corporate undertakings and dealings in the form of records. This indicates that maintaining records as valuable sources of proof and serving as the foundation for institutional accountability and transparency is critical (Kwanya, et. al, (2020).

Others have described records and their management as the management of any data received in a replicable format that is required for transaction processing. This description emphasizes the information management component (Katuu, 2015). As a result, understanding management philosophies aids in gaining a better understanding of the records management role (Katuu, 2015). However, records management is a

management activity that ensures that comprehensive, precise, and reliable records of institutional happenings and procedures are created, preserved, and eventually retrieved for both external and internal users to attest to the fact that the business an institution is conducting is in accordance with what is expected of them (Azameti & Adjei, 2013).

Moreso, it is extremely critical for institutions to practice sound and effective records management. Superior records are desired to ensure that organizations make the best decisions and carry out the most effective activities. Reliable and accessible records are convincing sources of evidence and information that help to maintain and promote an organization's integrity and accountability. (Andoh & Attafuah, 2021). Subsequently, the primary aims of records management according to Mokhtar and Yusof, (2016) comprise the need to;

1. Allow for improved filing techniques so that related data can be filed together and retrieved quickly when needed.
2. Control how information is created, as well as how it is received, managed, disseminated, used, and stored.
3. Reduce capital and ongoing investment and expenses in filing apparatus as well as space by recognizing, scheduling, and disposing of old information.
4. Sort and save records that are important to the institution or have historical, research, or other long-term value.
5. Create, distribute, and preserve copies of reports, forms, and other documents to save money for the organization.

Uses of Students' Information

Many institutional activities result in the generation of records. One of the steps in the life cycle of recordings is record formation. The act of accumulating records or integrating data into a recordkeeping structure is known as record production (Evans et al., 2014). The establishment of an acceptable system to document the institution's events; the preservation of records of every endeavour that are sufficiently comprehensive and exact to allow an audit of any aspect of the activities to ensure the fortification of the institution's rights (Evans et al., 2014).

According to Mondal and Mete (2012), records generation includes the formulation of dependable criteria to ensure integrity and availability, selecting the systems to log and track records, and recording, categorizing, and indexing strategies. A records generation strategy is required to ensure that records satisfy the necessary quality standards, and it is critical that they are stored in a secure and functional records management system to ensure that they are preserved over time (Mondal & Mete 2012).

According to Toner (2017), the primary objective of record keeping is to provide evidence of an organization's operation or to ensure accountability. Furthermore, when assessing the need for records, the goal should be to recognize and assess the institution's requirements for records that provide evidence and information, as well as records that are used for operational purposes and can support accountability, as well as the costs of creating and preserving the records that are required.

The risk to the institution must also be evaluated if certain records are not available. Records are made and used for a variety of purposes in higher

education institutions. Institutions keep records to help them make better decisions in their day-to-day operations. Additionally, records allow access to precedents, tactics, and historical proof. Institutions can use records to safeguard their rights and assets while also guarding against deceit (Toner, (2017)

Frimpong, et. al, (2020) emphasized that records must have two (2) fundamental features in order to support corporate functions and afford evidence: authenticity, which is defined as the persistence over time of the primary physiognomies of the record in terms of its setting, structure, and content, and reliability, which is defined as a record's ability to serve as dependable evidence. Furthermore, records with these characteristics will have sufficient substance, composition, and setting to provide a thorough justification of the events and actions to which the records pertain, and will reflect decisions, activities, and responsibilities in a consistent manner.

As a result, if such records are kept in a reachable, understandable, and operational format, they may be able to meet students' needs and be used for accountability purposes in the future (Asogwa, et. al, 2020). In addition, institutions create and maintain records to promote liability when they need to show that they have understood their duties and followed accepted procedures. (Asogwa, et. al, 2020).

ICT Policies in Tertiary Institutions

To complement the potentials of ICT and to act as frameworks for ICT integration in all aspects of society, most countries have built public information and communication technology systems (Guma, Faruque, & Khushi, 2013). ICT policy can be classified into three groups, according to

Lwoga (2012): vertical, infrastructural, and horizontal. The vertical ICT system discusses sectoral requirements such as health, education, and tourism. The infrastructure component is involved with enhancing public infrastructure, which is intertwined with telecommunications. The influence on societal concerns such as the right to know, tariffs, price, privacy, and security is addressed in the horizontal component.

In Ghana, the higher education sector is the most advanced in terms of ICT deployment and implementation (Obiri-Yeboah, Kwarteng & Kyere-Djan, 2013). Almost all of the country's top universities have their own ICT system, which includes ICT fees for students. Learners can use computer labs with broadband connections 24 hours a day, seven days a week. However, not all of the country's schools are equally equipped, and there are instances where ICT equipment is completely maintained by the commercial sector like cyber cafés on university campuses (Obiri-Yeboah, et al, 2013).

Furthermore, according to Obiri-Yeboah, Kwarteng, and Kyere-Djan (2013), opined that, the Ghanaian Government is committed to implementing some policy actions as well as standards aimed at: Transforming Ghana into an ICT cultured country and encouraging basic literateness as well as ICT literacy of the entire population through the implementation of various initiatives.

1. Using ICTs to improve and expand access to education, research resources, and services;
2. Providing a greater segment of the population with access to educational resources and facilities through exciting and inspirational

distant education (DE), such as online DE and virtual learning, that focuses on higher level learning in all areas and fields.

ICTs and Management of Students' Information

In the field of education, ICT plays a critical role in encouraging effective and efficient administration and management. According to Chidobi (2015), technology can be used directly in higher education institutions, from student administration to resource management. In this era of globalisation, there is a shift in the universal advancement agenda, and as a result, most educational institutions are undergoing considerable adjustments in order to reposition themselves in relation to ICT usage (Achu, 2017). The demand for technology innovation has sparked an uprising in the development of technical features for maintaining and managing academic records (Bigirimana et al., 2015).

Higher education institutions are quickly recognizing the importance of employing computers to store and manage student data. This is beneficial to higher education administrators, as well as academic and non-academic employees (Schmitt & Lanz, 2014). Because records and record keeping are the lifeblood of these organizations, it's no surprise that they're catching up to the educational sector (Bladergroen et al., 2012). Because they play such an important part in the university's day-to-day operations, university officials must regard the management of students' information as a fundamental obligation. It would be difficult to effectively strategize and administer an organization like a university if records were not kept and managed properly (Nwaomah, 2015).

ICT provides a wealth of facilities and opportunities for educational administrators to successfully carry out their responsibilities, according to Bigirimana et al., (2015). It's worth emphasizing that information and communication technology (ICT) systems have transformed university education by allowing data to be shared, saved, accessed, and processed by people who administrate, learn, and/or engage with a specific educational institution (Parker, 2012). Higher education institutions are expected to handle large volumes of data that must be processed quickly so that information can be provided to the administration for adequate decision-making as well as meeting the data needs of a variety of stakeholders, including students, guardians, alumni, the directory, the information community, and the general public (Tsokota, von Solms, & van-Greunen, 2019).

Additionally, the rising complexity of higher education institutions and the challenges they provide to their managers, ICTs are becoming increasingly important for quality assurance in the institutions (Egoeze, Misra, Maskeliūnas & Damaševičius, 2018). University administrators rely on data to make short- and long-term policy decisions. Nonetheless, most university administrations do not have a strong record-keeping culture. The limited records that are preserved are typically not properly stored, causing retrieval issues for users when they need them (Mittal, Prakash, & Pegu, 2014). Computers, microfilm, CD-ROMs, Cassettes, E-mail, collaborative software, and hardware, among other modern information storage amenities (Idowu & Esere, 2013), have all contributed to the real storage and management of university students' information. With just a press of a button, ICT can provide an indicator of the number of students who have enrolled, exact information on their fees

payment status, and an all-encompassing database of employees, students, and teachers (Bigirimana et. al, 2015). Moreso, at higher education institutions, it is critical to fully integrate ICT into student information management. Individual, institutional, and national development will all benefit from this.

Furthermore, as Franks (2013) points out, time and energy spent on manual record administration will be conserved, and communal trust between academic staff and students will be enhanced. ICT will also lay the framework for and be the subject of transcripts for graduates who choose to pursue specialized study (Achu, 2017). As a result, ICT has the potential to fill the void left by manual data management. Exams, staff recruiting and promotion, publishing, student enrolling, and admissions can all benefit from the use of ICT (Egoeze, et al, 2018).

The Role of ICT in Effective Management of Students' Information in Tertiary Education Institutions.

ICTs have the potential to accelerate, enhance, and develop skills; to stimulate and involve learners in learning experiences; to relate school experiences to work applications; to assist in creating financial viability for future workers; to contribute to drastic shifts in institutions; to encourage instruction, and to provide opportunities for linkage between the institution and the real world; to contribute to drastic shifts in institutions; to contribute to drastic shifts in institutions; to contribute to drastic shifts in institutions; to contribute to (Toro & Joshi, 2012). Students' information management habits have shifted dramatically in recent years ((Egoeze, et al, 2018). Students' records have grown from a paper-based responsibility including the preservation of various documents in an organization to a profession involving

the management of detailed internal information in multiple mediums (media) (Achu, 2017). The use of ICT in records management has resulted in enhanced speed, accuracy, diversity, flexibility, and detailed and comprehensive procedure documentation (Büyükbaykal, 2015).

Furthermore, Mbachu (2015) acknowledges that the use of ICT systems in students' information/records management has resulted in space savings because most information can be filed electronically, lowering the danger of a loss. Staff who use ICT in record generation and storage experience improved storage, retrieval, access, usage, improved security, improved preservation, improved communication, and enhanced record generation, according to a study conducted by Mohamed, Rasheli, and Mwagike (2018) on record management in Tanzania. As a result, it is widely accepted that ICT infrastructure such as word processors, electronic databases, e-mails, and management information systems may help students and academic records be communicated and managed more efficiently. (Nwaomah, 2015).

Leveraging on the foregoing talks, applying ICT to the management of student information will go a long way toward making these records more convenient, useful, and practical. Researchers (Mohamed, et al, 2018; Achu, 2017; Mbachu, 2015; Nwaomah, 2015) have underlined the importance of ICT for students' information management as assisting in the promotion and preservation of higher-quality output over time than manual activity. It also saves money, time, and labor while increasing productivity and fecundity. This ensures university administration's effectiveness.

Access to Information and Records

Allison and Otuza claim that (2017) opined that, the right to obtain information is fundamental to the relationship between the government and the people. Access to information is not only a requirement for successful governance, but it is also a fundamental human right that underpins all other rights (Ibid). Transparency, accountability, and the rule of law are all based on the free flow of information to some extent (Mabera, 2020).

Sincerity and transparency in decision-making can aid in the building of trust in an institution's work and the maintenance of a civil and autonomous civilisation. Individuals can only be members of an institution and express their rights if the institution provides information access. As a result, it is critical that information under an institution's care is not just accessible, but also useful to its residents. (Netshakhuma, 2021). Individuals are empowered when relevant and timely information is readily available, allowing them to effectively contribute to the governance process and hold institutions and their administrators accountable (Ibid).

Furthermore, according to Agu, Njoku, Umaru, Eleke, NNwokoma, and Bashiru (2022), the passage of access to information legislation in a country is an indication of movement away from a culture of secrecy and concealment and toward a culture of honesty and transparency. Administrators must be committed to changing their thinking to recognize that the information they handle belongs to the people, and that their constituents have the ability to obtain it (Ibid). The purpose of access regulations is to promote transparency and accountability in government by providing constituents with

a legally enforceable right to acquire comprehensive and accurate information (Yeboah, Adams, & Akotia, 2017).

Accessibility to records is a primary source of information and a basic right (Mokhtar & Yusof, 2016). Access to information refers to records, government decisions that have been documented, and evidence that supports and sustains government operations (Yeboah et. al, 2017). The link between good records management and adequate information freedom is crucial. As a result, institutions must develop a workable institutional structure as well as the ability to govern, promote, and improve information gathering, preservation, and utilization (Yeboah et. al, 2017).

If accurate records aren't kept in the first place, the right to access information is useless. Furthermore, if information is unavailable when it is needed, or if the plans for its eventual destruction or transfer to an archives service are insufficient (Akor & Udensi, 2013). archivists and records administrators have traditionally been passive guardians of information, with their responsibilities limited to information selection, storage, preservation, and control. Nonetheless, the situation has changed, and calls for a reform of the rules governing access to information have been proposed (Akor & Udensi, 2013)

Management of Students' Information/Records

Student data is critical to the effective and efficient administration of higher education (Chidobi, 2015). Students' information is critical in the administration of learning organizations because it outlines the development and implementation of a proper sequence of facilities that allows for adequate performance monitoring (Achu, 2017). Paper remains the substance for

records in management and documentation in traditional paper-based entities like higher education institutions, according to Agrahari and Singh (2013). As a result, records will continue to be the item, document, or medium via which information is shared. Although most records are on paper, information can be carried on other media such as graphics, pictures, flash drives, diskettes, machine-readable disks, and pictographic media (McKemmish & Gilliland, 2013).

Moreover, institutions' information requirements are ultimately determined by the kind of decisions they make. Nonetheless, most challenges in higher education institutions may have been avoided if these institutions had ICT facilities (Adam, 2017). As a result, Mahyar, Sarvghad, Tory, & Weeres, (2013) state that university administrators must supervise activities including the use of computers and other ICT equipment in a realistic manner. According to Evans et al. (2014), management is concerned with the organization and planning of various resources in order to achieve specific objectives. Planning, organization, staffing supervision, and control are the five (5) basic philosophies that comprise acceptable student information management:

1. Planning entails developing a strategy, stating the institution's aims and objectives, budgeting, developing a service program, and determining procedures and approaches.
2. The term "organization" refers to the process of allocating both people and physical resources in order to achieve the anticipated goals and objectives. This will aid in providing a sense of direction for students' information, as well as assigning the relevant resource in the

appropriate place, in the suitable sequence, at the appropriate time to fulfill the institution's objective.

3. In terms of student information management, staffing refers to issues such as employee competence, training, and ethical behavior.
4. Employee work performance, teaching and supervising, correcting and directing to attain the institution's aim are all examples of supervision.
5. Control - This entails ensuring that the institution's records personnel provide excellent service. It also includes rules compliance in students' information management.

Students' information must be dynamically handled throughout their career, according to Andoh and Attafuah (2021). This must be accomplished through a records management program, which is the primary conduit for implementing a records control system with goals that are aligned with the institution's (Ibid). Students' information in higher education institutions is subjected to sporadic and random damage, and is stored in a jumble of folders that are ill-organized. Moreover, there is a dearth of management procedures that safeguard student data from conception through disposal. According to Andoh and Attafuah, (2021), postulated that, the value of students' information management is the ability to maintain permanency in the management of a university's requirement of information required by learners for advanced and other associated institutions, employment placement, and devising and determination by the university, Ministry of Education, and other related education stakeholders. Achu, (2017) specify the value of students' information to include the ensuing:

1. Ensure that correct and suitable student information is realized and stored, and that this information is conveyed to parents/guardians, employers, and other organizations for learners' admission or employment.
2. Information is provided to institution administrators, the ministry of education, and other important stakeholders for development and determination.
3. Expedition of consistency in institution management and research endeavours that can improve effectiveness and adeptness.
4. Providing information to teachers, other professionals, and counsellors who interact with students.

Dinneen & Julien, (2020), in addition assume that educational governing boards rely on input from students to judge an institution's governance and academic excellence. In addition, while grading and rewarding pupils, administrators rely on information provided by students. Students' information is also used by researchers for research, which adds to knowledge. Sound student information management can provide an institution with a competitive edge (Achu, 2017), allow for continuous and controlled access to student information by several institutional arms at the same time, and safeguard an institution against frauds.

Despite the critical role that students' information management plays, scholars (Dinneen & Julien, 2020; Achu, 2017; Andoh, & Attafuah, 2021 and Mahyar et al, 2013) agree that several institutions give insufficient consideration to record management and thus control students' information haphazardly. No wonder, McKemmish and Gilliland (2013), school

administrators are regularly concerned about the alarming frequency of missing or lost critical student information, as well as the slow rate at which required students' information is recovered from storage by record administration employees. Displaced records have been known to obstruct critical decisions on important issues or lead to irrational decisions, which might result in social disaster or institutional dissatisfaction. (McKemmish & Gilliland 2013).

Additionally, Pedagogy, research, and community enhancement are all important aspects of higher education. In stating their mission, the majority of these institutions imply that they are committed to academic achievement, research innovation, and societal commitment. They establish records in the process of pursuing these goals, which serve as confirmation that the organization is following its legal commitments. The important testimony could be lost forever if these records are not properly controlled or moved. Nonetheless, Appropriate management refers to the implementation of logical controls at each stage of the information life cycle, in accordance with accepted information/record management models and philosophies (Achu, 2017; Akor & Udensi 2014; Asogwa, 2013).

Consequently, the loss of an institution's records might wipe out documentation of students' achievements, putting the school's human rights and interests at risk. Specifically, students' information management must be governed by a degree of discretion, be appropriately maintained, secured, and the content must be well kept. As a result, higher education institutions serve as hubs for data collection and, by extension, record keeping. Records being damaged when needed has become a regular issue.

Student Information and Records Management Practices

The way information is created and stored has changed dramatically in the previous few decades (b). Records management provides a critical service to any organization and its information-using stakeholders. The primary goal is to ensure that information is quickly accessible when and where it is needed within the organization (Mokhtar & Yusof, 2016). An efficient and effective records management program is required to fulfil this duty. Nonetheless, while an organization's records are private, they must be handled in the same way that the organization's other resources, such as workers, cash, and other assets, are maintained (Mokhtar & Yusof, 2016).

Information/records management systems and processes must make it easier for institutions to follow their strategies. Precise business functions and events in universities may be governed by specific regulations, expert practice, or moral tactics (Rothbard, 2015). Furthermore, school managers, universities, and other business units within the school bear full responsibility for the administration of information generated by their operations, guaranteeing that information managed in their sections is designed to fulfil the school's records management criteria (Mokhtar & Yusof, 2016). It's worth emphasizing that, in order for outstanding records management practices to be effective, senior management must designate or assign someone to the task of certifying that thorough records management practices are implemented and retained.

Theoretical Framework

The study will be premised on two theories: the Technology Acceptance Model (TAM) by Davis (1989) and the Theory of Planned Behaviour.

Technology Acceptance Model (TAM)

Davis (1989) developed the Technology Acceptance Model (TAM) to explain how users embrace technology (in this case, ICT integration in university administration). Individuals' attitudes (or perceptions in this case) toward utilizing new technology are determined by specific behavior, beliefs, perceived ease of use, and perceived utility, according to Davis (1989, 93). Perceived usefulness is the degree to which a person believes that using technology improves performance and output, whereas perceived ease of use is the degree to which a person believes that utilizing technology is simple. According to Davis, Bagozzi, and Warshaw (1989), the apparent complexity of new technologies such as ICT creates a level of ambiguity in users' minds about their successful adoption. As a result, people establish impressions and intentions about learning and using new technologies.

Additionally, Technology Acceptance Model argues that actual technology adoption is decided by intent to use, which is influenced by a person's attitude toward new technology innovation and perceived utility (Pandiangan, et. al, 2021). As a result, perceived usefulness and perceived ease of use are two major predictors of information technology acceptability (Pandiangan, et. al, 2021). Technology Acceptance Model has been employed in numerous research to explain ICT adoption. Scholars have already demonstrated that Public Universities is associated with both adoption and continuation intentions (Davis, 1989). Public Universities has been demonstrated to affect satisfaction and attitude about technology in post-

adoption studies (Dajani & Yaseen, 2016). PEOU has been found to have an impact on both PU and adoption intent (Davis, 1989).

Technology Acceptance Model has been criticized for a number of problems, including the original model's intended generality, its failure to account for non-organizational settings, and its failure to account for the moderating effects of ICT adoption in various contexts (Siregar, Puspokusumo **& Rahayu, 2017).**

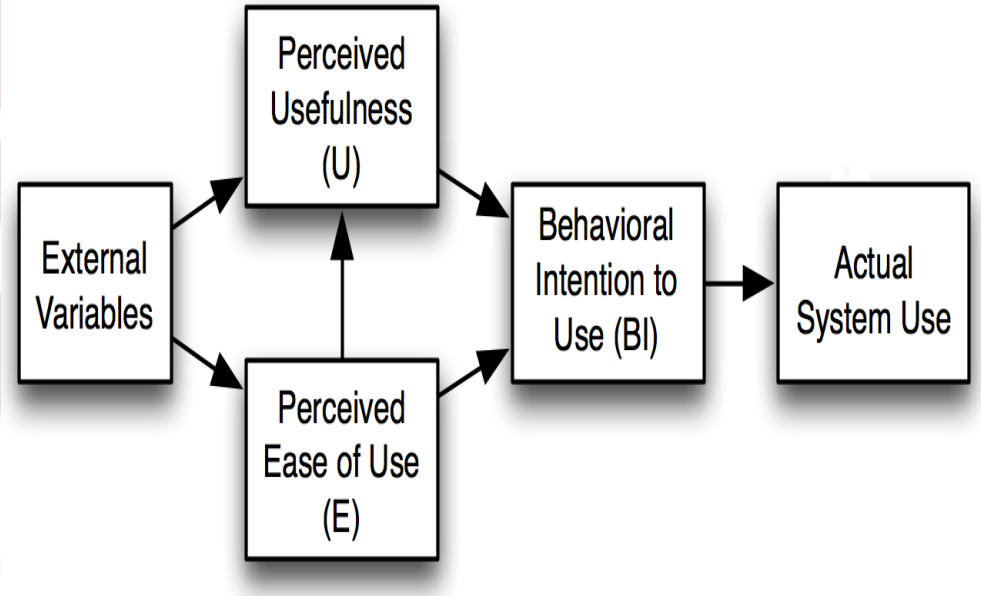

Figure 1: The Technology Acceptance Model adopted from Davis (1989)

Using the Technology Acceptance Model (TAM), administrators who are adopting new technology must examine the perceived utility of the technology before accepting it. To accept the new technology, they would have to believe in it. They must also believe that incorporating new technologies into their work would improve their productivity. Additionally, university administrators would need to assess the new technology's apparent ease of use. In that case, they would need to know how much effort they expected using a particular system would entail. As a result, new technology is

accepted for usage if the University Administrators believe there would be personal benefits. TAM was determined to be effective in the study since the researcher wants to know what the problems and factors are for integrating digital literacy into administrative tasks at universities.

The Theory of Planned Behaviour

The Theory of Planned Behaviour (TPB) is a well-known social psychology theory that claims that key beliefs influence behavioral intentions and subsequent behavior (Ajzen, 1991). The Theory of Planned Behaviour (TPB) brought a new dimension to TRA: perceived behavioral control (PBC). The perception of control over the performance of a specific behavior is referred to as perceived behavioral control. The Theory of Planned Behaviour has been used as the theoretical foundation in numerous studies on ICT adoption. (Sok, Borges, Schmidt & Ajzen, 2021). This research discovered strong connections between attitude, subjective norms, perceived behavioural control, and behavioural intention, similar to TRA investigations. The importance of the perceived difficulty of the behavior and the person's perceived ability to act out the behavior was highlighted by PBC as an additional construct in Theory of Planned Behaviour. PBC has been demonstrated to have a direct impact on technology adoption and usage intentions in a number of studies **(**Yuriev, et. al, 2020).

Furthermore, Hasbullah, et. al, (2014), said that, The TAM was compared to the Theory of Planned Behaviour in order to better understand people's intentions to use technology. Three key distinctions emerged as a result of this: 1) TAM assumes that the main influences on user decisions are utility and convenience of use, whereas Theory of Planned Behaviour focuses

on beliefs that are unique to each scenario and claims that some beliefs can be generalized to other settings while others cannot; 2) Unlike the TPB, the TAM is not as thorough in determining social variables; and 3) the TPB emphasizes behavioural control, whereas the TAM concentrates solely on technology ease of use. Mathieson (1991) further suggests that while TAM is useful for gathering general information about people's perception of a system, TPB can provide detailed information regarding each of its components that might relate to a specific group of people.

Deductions drawn from the Theory of Planned Behaviour (TPB) indicates that, the attitude, beliefs, and views of digital users or ICT users, particularly university administrators, have a significant impact on the use and uptake of digital literacy. It is worth noting that users' performance improves when they have a favorable attitude, opinions, and beliefs about digital literacy. As a result, it can be stated that if university administrators adopt a positive attitude toward the use of ICT or digital tools, their previously existing digital abilities will be sharpened, allowing them to increase their performance. The Theory of Planned Behaviour (TPB) will, on the other hand, assist the researcher in comparing findings and making broad generalizations, as well as providing solid recommendations to help shape the use of ICT in students' information management in Higher Education Institutions, including Accra Technical University.

Empirical Review

Challenges mitigating the usage of ICTs in students' information management

Any genuine improvement in the education industry requires the use of ICT for information management. As a result, if the underlying difficulties of ICT are not solved, using ICT systems in record administration may be ostensibly problematic (Pegu 2014). Furthermore, Lemieux (2014) identified inadequate installation of ICT-related infrastructure, intermittent electrical supply, and a lack of maintenance culture as problems influencing ICT usage. Other challenges in the application of ICT for students' information management include a lack of basic and adequate infrastructures and/or resources, such as the lack of basic and satisfactory physical amenities, such as space for computers with internet connectivity, generators, and adequate equipment (Katuu, 2015)

According to Abdulkareem, (2015), the slow evolution of various characteristics of ICTs, such as the Internet, in several African countries is mostly due to insufficient scientific and financial management, as well as other incompetence on the side of the telecoms arena. The fact is that most African higher education institutions' Internet infrastructure is still inadequate. Even when the infrastructure is in place, the study found that application levels are significantly lower than in industrialized countries. Nonetheless, outside of the major cities, the number of clients in Africa is growing. Botswana, Ghana, Kenya, Tanzania, Zambia, and Zimbabwe, for example, all have Points of Presence in over 70 places across their respective countries.

Institutions in most countries, however, are still in the early phases of ICT adoption, with sporadic and disorganized provision and application, some improvements to the educational process, and others the expansion of e-learning, but no significant advancements in pedagogy and learning (Mondal, & Mete, 2012). Students are unable to use ICT in their information management because of a lack of expertise in the installation, operation, and maintenance of ICT facilities (Asogwa et al., 2015). These areas are crucial for good record management using ICT. Furthermore, many people are unable to purchase ICT facilities due to their high cost. This makes using these facilities for record management challenging. As a result, financial support is critical for the successful installation and integration of ICT for student data management (Azameti & Adjei, 2013)

Similarly, a lack of primary education and ICT skills may provide a challenge to record management (Azameti, & Adjei, 2013), since many academic and non-academic employees who should be using ICT facilities are not computer literate and hence overlook the benefits of ICT in record administration. Furthermore, several of these employees have conservative mindsets and continue follow old practices, making change difficult (Mondal, & Mete, 2012).

Consequently, any genuine improvement in the education sector requires the use of ICT in information management. As a result, if the underlying difficulties of ICT are not addressed, using ICT systems in record management could be troublesome. (Pegu, (2014). Furthermore, Lemieux et al. (2014) identified inadequate ICT-related facility installation, intermittent electrical supply, and a bad maintenance culture as problems affecting ICT

utilization. Other challenges in the application of ICT for students' information management include a lack of basic and adequate infrastructure and/or resources, such as the lack of basic and satisfactory physical amenities, such as space for computers with internet connectivity, generators, and adequate equipment.

Parker, (2012) Infer that, in the realm of electronic records management, insufficient competences and skills among records and archives administration staffs reflect a failure to serve a key function in inventing and implementing electronic records management practices. An empirical investigation on the use, problems, and benefits of electronic records management (Bigirimana, et al. 2015). Despite intensive training, it was discovered that most employees never became accustomed to the system since it was not user friendly, issues arose from the way elements of the system were set up, and the rules controlling usage were too complex.

Mosweu et al., (2014) According to the report, in order for ICT projects to be successful in Ghana's higher education institutions, they must be adapted to the specific needs of the institutions and implemented using appropriate technology. As a result, ICT success in these institutions will be dependent on the proper design of software and hardware that meets the Technical Universities' criteria. Addy and Ofori-Boateng (2015) mentioned that, ICT programs in these institutions are not tailored to the local situation, and as a result, there is a gap between design and reality, which is referred to as the technological frontier. Furthermore, Ghana's low use of ICTs in addressing service delivery in the public and private sectors is due to issues

related with workforce characteristics defined by a poor professional, technical, and managerial workforce base. (Asogwa, 2013).

Existing Policies measures, instruments and initiatives

According to Oliver and Foscarini, (2014), The Government is committed to implementing a number of policy initiatives and measures, including those aimed at: transforming Ghana into an ICT literate nation and promoting basic literacy and ICT literacy of the population at large through the implementation of special initiatives targeting, promoting and encouraging distance education, including electronic distance education and virtual learning, focusing on tertiary level education and training in all fields and disciplines to broaden access to educational and training resources and services to a larger section of the society; modernizing the educational system using ICTs to improve and expand access to educational, training, and research resources and facilities; promoting and encouraging distance education, including electronic distance education and virtual learning focusing on tertiary level education (Republic of Ghana, 2003).

Chapter Summary

The literature explored the concept of student information management, which recognizes that records are valuable assets that must be properly managed and secured. Records serve as a reference point for current and future institutional decisions and operations. Students' information or records serve an important role in institutions by giving evidence and information regarding student and institution transactions. Records provide a tool for holding institutions accountable for their actions, and they eventually serve as the foundation on which institutional memory is built. It is

undeniable that diverse definitions of students' records or information as a concept lead to the conclusion that records are critical instruments in the operation of institutions, and that their non-availability could result in inadequacies or failure in their everyday operations.

As a result, without information, it is impossible to determine whether institutions have carried out their responsibilities and obligations properly. It's also impossible to say whether their activities and interactions match the standards of competence, acceptability, or good governance ethics, or whether they've done anything that shouldn't have been done. Students' records or information are major instruments in the running of institutions, and their non-availability could lead to inadequacies or failure in their everyday practices, according to the numerous definitions analyzed. Nonetheless, without information, it is impossible to determine whether institutions have carried out their responsibilities and commitments. It's also impossible to say whether their activities and interactions match the standards of competence, acceptability, or good governance ethics, or whether they've done anything that shouldn't have been done.

Further, the talks on the notion of Information and Communication Technology (ICT) revealed that ICT has become one of the fundamental pillars of current civilisation in a very short time. ICT is a more explicit term that emphasizes the function of amalgamated communications as well as the incorporation of telecommunications, computers, and the necessary software, middleware, storage, and audio-visual systems that allow consumers to access, save, transfer, and manage information.

Furthermore, based on the findings of the review, student information or records management is a management activity that ensures that comprehensive, precise, and reliable records of institutional happenings and procedures are created, preserved, and eventually retrieved for both external and internal users, as well as attesting to the fact that the business an institution is conducting is in accordance with what is stated in the mission statement.

Additionally, the study was based on the Davis (1989) Technology Acceptance Model (TAM) and the Theory of Planned Behaviour. Based on the discussion, it is anticipated that administrators utilizing new technology would have to examine the perceived usefulness of the new technology in order to accept it, according to the Technology Acceptance Model (TAM). They would have to believe in the new technology in order to accept it and improve their work performance in terms of student information management. Furthermore, university administrators would have to examine the new technology's perceived simplicity of use. Similarly, according to the Theory of Planned Behavior (TPB), the attitude, beliefs, and perceptions of digital users or ICT users, especially university administrators, have a significant impact on the use and adoption of digital literacy. As a result, it's worth noting that users' performance improves when they have a good attitude, attitudes, and beliefs about digital literacy.

Concerning the use of student data or records: Following up on the discussion of the advantages of using students' information or records, Records generation, according to the assessment, includes developing dependable criteria to ensure integrity and availability, selecting the methods

to log and track records, and recording, categorizing, and indexing processes. A records generation strategy is required to ensure that records satisfy the required quality standards, and it is critical that they are stored in a secure and functional records management system to ensure that they are preserved over time. Regardless, the primary objective of record keeping is to provide evidence of an organization's operation or to ensure accountability.

Following that, past papers related to this study were examined. Despite the fact that numerous studies have been conducted on ICT and student information management, the researcher believes that the use of ICT in student information management has received little attention. Nonetheless, the need that this study will cover is the exploration of the use of ICT in students' information management at Accra Technical University, since this will solve information security concerns and increase the accuracy and long-term sustainability of student data.

CHAPTER THREE

RESEARCH METHODS

Introduction

This Chapter contains information on the methods used in obtaining the relevant data on the use of Information Communication Technology (ICT) in students' information management at Accra Technical University of Ghana. Aspects discussed in the chapter includes a description of the research design, the population, sample, sampling procedure, data gathering instrument, pre-testing of instrument, testing reliability, data collection procedure and the methods of data analysis.

Research Design

The research approach forms an important part in the reason process as it provides not only the procedure for conducting the study but the philosophical worldwide views upon which the study is built. There are three approaches which are widely used in the Social Science literature in conducting research. These include; qualitative, quantitative and mixed methods. All these three approaches have their philosophical underpinning (Dammak, 2015). Nonetheless this study will adopt the descriptive and the qualitative approaches to data collection and analysis.

The exploratory research design was used for the study and its fundamental aim is to examine the use of ICT in students' information management at Accra Technical University.

Philosophical Underpinning

The philosophy that underpins this study is interpretivism. Interpretivism involves the interpretation of social phenomena by people

based on their lived experiences and cultural and social values (Hussai & Nasseef, 2013). Interpretivist gathers data through the use of techniques such as observation, interviews, oral history, documents and audiovisual materials (Petty, Thomson & Stew, 2012). The philosophical perspective of this study was drawn from the interpretative paradigm which falls within the constructivism theoretical perspective of world view. Constructivism theoretical perspective indicates that meaning is constructed by humans as they engage with the world they are interpreting (Kimmie, 2012). Broido & Ro, (2020), in discussing constructivism perspective asserted that the paradigm leads to more complex understanding of subjects based on their historical and social perspectives and generate meanings arising in and out of interaction with a human community.

Hence to better appreciate the experiences of University Administrators in Ghana, it is essential to engage them in their world and make sense of it. In keeping with constructivism, the theory does not seek to describe a circumscribed norm but rather to depict the depth and diversity of a phenomenon, Antwi & Hamza, (2015). asserted. Mack (2010) cautions that how one views the constructs of social reality and knowledge affects how they go about uncovering knowledge of relationships among phenomenon and social behaviour and how they evaluate their own research and other research. In relation to this research theory, the study agrees with the assumptions since it would pave way for a more complex understanding on the use of ICT in students; information management at Accra Technical university.

Philosophically, the interpretative paradigm views knowledge as subjective rather that objective. The interpretative paradigm can never be

objectively observed from the outside, rather it must be observed from the inside through the direct experiences of people (Mack, 2010). For that reason, the role of the researcher in interpretative paradigm is to understand, explain and demystify social reality through the eyes of different participants. No wonder, Creswell (2016) indicated that assumptions identified in these works hold that individuals seek understanding of the world in which they live and work. Thus, what one sees as reality is dependent on one's interactions and experiences which differ from persons to persons. This study is situated on the interpretivism paradigm and essential to this study since the study will explore digital literacy and performance of University Administrators.

The Qualitative research

The qualitative research is the interpretation of data whereby the researcher analyses cases in their social and cultural context over a specific period of time where researchers come out with theories that emphasize how events occur over some time in a particular area under study (Goffin, et. al, 2012). With qualitative research, focus is on interpretation and experiences people have about their world which is shaped by their social values and cultural background (Gerrish, 2011).

Qualitative research allows the researcher to get insight into a certain group's mentality (as to why they act the way they do) and to gather in-depth information for the study (Nayak & Singh, 2015) . Researchers can get an authentic account of an individual's subjective experiences (internal conflicts, pressures, and inspirations) that shape his or her perspective on particular events by employing case study research (Bell & Waters, 2018).

It is noteworthy that, this study will adopt the qualitative approach because, this approach will allow the researcher to interview experts in the field about their experiences using digital resources and how it has enhanced their performance as administrators.

Exploratory Research Design

The research design adopted for the study is exploratory research design. **Exploratory** research design is used to determine the scope and type of cause-and-effect linkages discovered through descriptive research (Dudovskiy, 2016). The Exploratory Research design was, therefore, adopted to explore the use of ICT in students' information management. The "what" and "why" questions were raised by the research. As a result, the **exploratory** research design provides for both explanation of the study's variables and causal linkages (effects) established by these variables (Kuranchie, 2016). The design's major strength is that it can uncover explanations for a wide range of processes, as well as examine the effects of modifications on existing norms and processes, and it usually allows for replication if necessary (Dudovskiy, 2016). However, Dudovskiy, (2016) asserts that its flaw is that, due to the influence of a wide range of elements and variables in the social context, it might be difficult to draw suitable conclusions from explanatory (casual) study findings.

Population

According to Cohen, Manion and Morrison (2017) population is a group of elements or variables, humans, objects or even which form specific criteria that are interested to the researchers for generalization of results. Population is also referred to as the total number of subjects of your research

that conform to a clearly defined set of characteristics (Azimi & Rahmani, 2013). The total population of this study constituted Administrators, Registrars and ICT Coordinators of Accra Technical University of Ghana. In all 13 participants were included in the study.

Sampling Procedure

A total sample of thirteen participants were sampled for this study. According to Teye (2012) sampling as the process of selecting a number of study units from a defined population. Leady (2010) defines sampling as the process of choosing from a much larger population, so that selected parts represent the total group. Sampling per say is not a technique or procedure for getting information but it ensured that any technique used helped in getting information from a smaller group, which accurately represented the entire group (Teye, 2012). Sampling is the means of picking out a unit of discrete individuals for a research study in such a manner that individuals picked out are representation of the aggregate group they are chosen from, thus, representing the characteristics found in the entire group (Orodho, 2014).

To conduct a simple random sampling of the departments, numbers were assigned to all the 16 departments of Accra Technical University, the numbers were written on pieces of papers, folded into equal sides and placed into a bowl. The researcher then picked the numbers from the bowl without replacement. The schools corresponding to the first 10 numbers picked will be used for the study. Ten departments out of the 16 departments were be randomly sampled for the study.

In sampling the respondents for this study, the purposive sampling will be used to select the participants for the study. A total of 10 Administrators 2

Registrars (Main and deputy Registrar of ATU) and the ICT coordinator were purposively selected for the study. With purposive sampling (also known as judgement sampling), Ames, Glenton & Lewin (2019). explained that in purposive sampling, the researcher handpicks the cases or elements judged to be typical or representative from the population. The purposive sampling technique was used to select Administrators, Registrars and the ICT coordinator because they are in directly in charge of administrative activities and students' information management of the school and as result possess the right information that will be relevant for this study.

Data Collection Instruments

An in-depth semi-structured interview guide was used to acquire the primary data, which was written down or recorded using a voice recorder by the researcher. As Kothari (2004) points out, in order to induce a verbal response during an in-depth interview, the interviewer must provide a verbal energy. In-depth interviews, according to Bettez, (2015), allow for the collection of information on a wide variety of subjects that are related to the subject. Face-to-face and telephone interviews can be accommodated in this approach (Deakin & Wakefield, 2014).

In light of the aforementioned, the study used this strategy to allow participants to express a wide range of thoughts and ideas on the subject matter. Scholars like Bettez, (2015), and Deakin and Wakefield, (2014), have acknowledged semi-structured (where the researcher asks questions based on relevant points listed in the interview guide) and unstructured interviews (in which the researcher asks questions in a manner to ensure sufficient concentration) (where participants express their own opinions based on the

subject on board). In order to collect primary data from the selected participants who are experienced in interacting with the current situation under study, The researcher adopted the semi-structured interview which enabled him to ask more questions after receiving the information from them.

The interview guide was used to collect data from the participants because interviews allow the researcher to enter another person's viewpoint, to better understand his/her perspectives (Iphofen & Tolich, 2018). Interviews also allowed for a wide range of participants‟ understanding to be explored, and can reveal important aspects of the phenomena under study. Semi-structured interviews allow the interviewer to focus on the research questions, yet open up new avenues for further questions (Ibid). They further suggested that in a semi- structured interview, respondents should be asked the same questions, but in a more conversational way. They, however, note that the interviewer has more freedom to arrange the order of the questions or even rephrase them.

The interview schedule for the Administrators, Registrars and the ICT coordinator were a semi-structured one. This afforded the researcher ample freedom to formulate questions and determine the order of questions. Although interviews are more time consuming costly and offers less anonymity than other methods, the researcher's choice of interview guide stems from the fact that, respondents had the opportunity to react verbally to items of particular interest: there is flexibility in it because the interviews were adjusted to meet diverse situations; it was easy to administer because it does not require respondents to have the ability to read. It also afforded the researcher the opportunity to observe non-verbal behaviour of participants. It

is interesting to note that, Maxwell and Mutawalli (2012), admits that 'an interview is a useful way to get large amount of data quickly'. Lastly, the capacity for correcting misunderstanding of respondents was assured since the presence of the interviewer assisted in correcting misunderstanding as well as responding to questions.

The interview schedule for the participants contained five items with subsections. This will elicit information on the, major areas of students; information management and the use of ICT: demographic characteristics of participants, the type of ICT tools used, the challenges faced when using ICT in students' information management, the role of ICT in enhancing the performance of University Administrators, the strategies and policies in place to manage and mitigate challenges confronting the use of ICT in students' information management.

Data Collection Procedure

An introductory letter was obtained from the researcher's department, Institute of Educational Planning and Administration (IEPA). This introductory letter was presented to the various Administrations of the sampled departments at Accra Technical University, the sampled Administrators and Registrars to seek permission and also scheduled a date for them to have ample time for their interviews. This prior notice gave respondents ample time to get them prepared for the interview.

The researcher took off for the collection of data. In each department, her mission and purpose for undertaking this exercise was made known to the participants. The researcher obtained verbal consent from the participants after informing them that they had the right to agree or refuse to participate in the

research activities. Also, participants were assured of confidentiality and anonymity on information provided. The interview is anticipated to last between twenty to thirty minutes.

Pilot Testing of Instrument

In order to ascertain the validity, reliability, consistency and appropriateness of the interview guide, a pilot test of the interview guide was conducted at the University of Ghana. This exercise was necessary because as Bell, (2018), observed 'all research tools should be pilot tested on a small population'. This revealed the ambiguity of questions and poorly structured and constructed questions. University of Ghana was selected because of proximity and it bears almost the same characteristics as Accra Technical University.

Six participants from the University of Ghana were sampled for the pre-testing. A total of 3 Administrators and 2 Registrars and the ICT coordinator were drawn from five selected departments of the University of Ghana. Validity is the correctness or precision of the respondents' account of the social issue being investigated and represented by the researcher (Beitin, (2012).

Trustworthiness of Research Instrument

The degree to which a concept is precisely quantified in a quantitative investigation is termed validity (Wainer & Braun, 2013). Reliability, often known as instrument accuracy, is the second criterion for evaluating the quality of a quantitative investigation. **(**Waterhouse, London, & Gillberg, 2016). This suggests that validity and reliability are unfamiliar to qualitative research and are not a good fit (Noble & Smith, 2015**)**. Because of this,

qualitative research substitutes data trustworthiness for validity and reliability. Data trustworthiness according to Connelly, (2016), is the degree of confidence in the data, interpretation, and procedures employed to assure the quality of a study.

Credibility, transferability, dependability, and confirmability are the four main criteria that qualitative researchers must articulate proof of to guarantee the reliability of the study's conclusions (Mainz, Schädlich, Schien, Michl, Schelhorn-Neise, Koitschev & Beck, 2014). According to Bush and Moore (2012), a study does not necessarily need to apply all of the criteria for data trustworthiness.

The researcher interviewed the various participants at different times and locations to ensure independence and confidentiality of the responses thereby making the data credible. Thus, the researcher did not put all participants in a single setting. This ensured that the information individuals shared was what they wanted to share and was not influenced by the opinions of other participants. This increased the credibility of the information gathered.

The researcher also carried out an audit of the study to determine the dependability of the qualitative data. An inquiry audit is having a researcher other than the lead researcher examine the methodology used to collect data, the results of the data analysis, and the conclusions drawn from the study (Noble & Smith, 2015). The supervisor contributed to making the data collecting and analysis process in the assigned study dependable.

The researcher also employed an audit trail approach to establish confirmability. An audit trail approach is used when a qualitative study

describes the steps taken for gathering, analyzing, and interpreting data (Carcary, 2020).). Every step of the procedure, from the commencement to the interpretation of outcomes, is shown in depth in this paper. Colleague researchers were also requested to analyze the transcribed data, themes that were developed, and conclusions drawn to see if there were any discrepancies. A few participants received copies of the transcribed interview so they could check the transcription to make sure they said what was recorded.

According to Bush, (2012) reliability is associated with dependableness in the data presented. Nonetheless, the validity of the instrument was tested by content and face validities. The researcher tried to ascertain the content validity of the instrument by submitting it to the supervisors of the thesis for perusal and comments. The face validity was also done by colleague graduate students. The rationale for the pilot testing is to validate the instrument for the main study. The instrument was therefore deemed reliable. The content of the instrument was validated by peers and supervisors.

Data Processing and Analysis

Pertaining the analysis of the interview with the Administrator and the Registrars, the analysis will be undertaken in three phases:

First, interview was recorded using a recorder. The interview transcripts were reviewed several times, searching for “recurring regularities” (Isaacs, 2014). The researcher highlighted quotes and phrases from the interview that were significant to the study. Further, using the constant comparative method (Xu & Storr, 2012), the researcher went go back and forth among transcripts until categories emerged consistent, yet distinct

(Quadrelli, et al.,2018). The researcher then named these categories, code the transcripts, and place them into sections in labeled folders representing each category (Velardo & Elliott, 2021).

Secondly, the researcher collated the coded interviews and field notes and looked for relationships within and across the data sources. A table was developed to compare various coded interviews. As tentative categories emerge, the researcher tested them against the data (Bell, Bryman & Harley, 2018). Subsequently, the researcher tested the interview data against the mental model. Finally, the researcher integrated and refined the categories until themes are solidified (Cobanoglu & Turktarhan, 2021).

Ethical Considerations

Ethics refers to well based standards of right and wrong that prescribe what humans ought to do, usually in terms of rights, obligations, benefits to society, fairness, or specific virtues (Pillay, 2014). The respondents upon arrival of the researcher for the interview session will give ample time to go through the interview guide. The researcher was present to assist respondents with questions they might not understand. The respondents were allowed to respond to questions based on their convenience, and also, to decline participation based on their own will. Participants were assured of confidentiality and anonymity on information provided since the purpose of the research was made known to them.

Study Area

Accra Technical University was the first Technical University to be established. It was established in 1949 as a Technical School and commissioned in 1957 as Accra Technical Institute. In 1963, the Institute was

renamed Accra Polytechnic, by the orders of the then President, Dr. Kwame Nkrumah. By the Polytechnic Law of 1992 (PNDC 321), which became fully operative in the 1993/1994 academic year, Accra Technical University was elevated to a tertiary status. The institution was then placed under the Higher Education Council with autonomy to award Higher National Diplomas (through the National Board for Professional and Technician Examinations (NABPTEX). (Field survey, 2022)

With the passage of the PNDC Law 321, the University upgraded its programmes and facilities in it to provide middle-level manpower to revolutionize and feed the growing Ghanaian industries. Notwithstanding the difficulties that characterized the sudden change over from secondary to a tertiary status, Accra Technical University made a tremendous progress in its review and expansion of curricula to suit contemporary needs.

Additionally, Accra Technical University began to offer Higher National Diploma (HND) programmes in Mechanical Engineering, Electrical/Electronic Engineering, Building Technology, Civil Engineering, Furniture Design and Production, Secretaryship and Management Studies, Bilingual Secretaryship and Management Studies, Accountancy, Marketing, Purchasing and Supply, Hotel Catering and Institutional Management, Fashion Design and Textiles, Mathematics and Statistics, and Science Laboratory Technology. The technician courses offered by the Polytechnic were maintained. (ATU, 2022)

Furthermore, In 2007 the Polytechnic Act (Act 745) was promulgated and it repealed PNDC Law 321 of 1992This Act has granted the Polytechnics autonomy to award the Higher National Diplomas (HND), Diplomas and other

Certificates accredited by the National Accreditation Board (NAB), and award Degrees subject to the conditions that the council of that Polytechnic may determine. Accra Technical University currently, offers ten (10) Degree (Btec) and fifteen (15) HND Programmes. These programmes are run in three schools. As a tertiary institution, Accra Technical University is governed by a Council established under the Technical University Act 2016 (Act 745). (Dwomoh, 2018).

Chapter Summary

This chapter described the methodology and procedures that used to collect the data from the respondents in the study. The descriptive research design was used to allow the researcher to interpret the results in different ways. The population, the sample and sampling procedures, the research instruments as well as the data collection procedures and the data analysis procedures were also described in this chapter. The chapter further discussed the ethics considered in ensuring the humane treatment of the participant in the research.

CHAPTER FOUR

RESULTS AND DISCUSSIONS

Introduction

This chapter deals with presenting and analyzing data. All data gathered for the study is organized and discussed in this chapter. The main objective of the study is to is to collect data from participants on the Use of Information Communication Technology for Students' Information Management at Accra Technical University of Ghana.

Demographic Characteristics

The demographic characteristics considered in the study are sex, age, educational experience and working experience. The purpose of this information is to explore the examine the Use of Information Communication Technology for Students' Information Management at Accra Technical University of Ghana. and also determine the scope to which the responses provided could be depended upon.

Table 1: Age and Gender of the Participants

Participants	Age	Gender
Participant 1	35	Male
Participant 2	33	Female
Participant 3	44	Male
Participant 4	29	Female
Participant 5	30	Male
Participant 6	29	Female
Participant 7	28	Male
Participant 8	43	Male
Participant 9	53	Male
Participant10	29	Male
Participant 11	45	Female
Participant 12	39	Female
Participant 13	58	Female

Source: Field survey, (2023)

From table 1, the findings of the study indicates that, the average age of the participants is 39 years. This indicates that, the Participants are much more matured to provide information needed from them. This finding is fairly comparable to prior studies by Yeboah, et al., (2017). Which found the average age of participants in his study to be 38 years indicating that there was much younger population. Therefore, they are anticipated to be matured to critically respond to issues raised in the study. Secondly, the findings revealed that, both sexes were fairly represented in the study. Thus, out of the 13 participants sampled for the study,7 were males and 6 were females. This is to ascertain whether gender had any influence on the study.

Table 2: Working Experience of the Participants

Participants	Working Experience
Participant 1	6 years
Participant 2	7 years
Participant 3	2 years
Participant 4	4 years
Participant 5	9 years
Participant 6	5 years
Participant 7	4 years
Participant 8	8 years
Participant 9	12 years
Participant 10	6 years
Participant 11	3 years
Participant 12	3 years
Participant 13	10 years

Source: Field survey, (2023)

On the Number of Working Years (Work Experience), the study discovered that, most participants have worked with their various institutions

for more than 5 years. On the marginal, just two participants indicated they have worked with the company for 2 years and 3 years respectively

One of the participants postulated that, *"I have been working with my institution for the past 6-9 years. It has not been rosy dealing with accounting issues but we keep on thriving day in and out."* (P1).

Another participant, indicated that, *"I'm just 8 months here and my first time working with bank right after school. Although I have been working with other financial institutions for over 9 years now."* (P5)

"I have been working with the institution for 2 years now." (P7)

"I have worked with Accra Technical University for almost 10 years now since my national service days." (P13)

"I came into this institution as a typist, just a certificate holder. Today I hold an MA in Public Administration and has been at post for the past 6 years." (P10)

"Accra Technical University is my home; I have been at post here for the past 12 years and risen from a junior staff to a senior staff." (P13)

"Interesting question. I Have been an administrative staff for the past two years; I was absorbed as a permanent staff here right after my National Service program." (P5)

Regarding the Educational level of the participants, the findings reveal that, the highest educational qualification is masters and the lowest is Diploma certificate. This indicates that, participants are fairly educated and possess requisite knowledge on the use of capital budgeting techniques.

Table 3: Demographic Characteristics of the Participants

Participants	Educational level
Participant 1	Degree
Participant 2	Masters
Participant 3	HND
Participant 4	Degree
Participant 5	HND
Participant 6	Degree
Participant 7	Diploma
Participant 8	Masters
Participant 9	Degree
Participant 10	Masters
Participant 11	Masters
Participant 12	Mphil
Participant 13	Degree

Source: Field survey, (2023)

Data Presentation and Interpretation

Research Question 1: Internal policies related to the use of ICTs for students' information management in Accra Technical university of Ghana.

Internal policies related to the use of ICTs

On the Internal policies related to the use of ICTs for students' information management in Accra Technical university of Ghana. Most participants mentioned that, Privacy Policy, Data Collection Policy, Health Information Collection Policy, Admission Policy, Awards of Grades Policy, Records Management Policy, ICT Software Management Policy, ICT Security Policy, ICT Usage Policy and ICT Training and Development policies are the key internal policies in place so far as students' information management at Accra Technical University is concerned. This affirms the findings of Achu, (2017) who mentioned that, Higher Education Institutions have a number of outlined internal policies that regulate the activities of administrative staff especially with the use of ICT in students' information management. Additionally, Obiri-Yeboah, et al., (2013), added that, the management of Higher Education Institutions are keen and committed to implementing some policy actions as well as standards aimed at improving students' information management through the use of ICT tools to improve practice and data security which is very key to information management. Some key excerpts raised from the interviews revealed that:

> *Participant 7 stated that, Accra Technical University is very particular with its internal policies on students' information management. In this regard, there is a bi-annual and annual Continuous Professional Development Programs organized by the institution to abreast administrative staff with current*

trends of using ICT in the management of students' information (P7)

Another participant mentioned that, Accra Technical University is very specific with internal policies regarding student information management. The participant further added that, while the organization is transiting gradually from the traditional approach to the use of ICT in students' information management, administrative staff from various departments and units have been taken through series if ICT and information management and data security training sessions, to equip administrators with the requisite skills, competence and knowledge in order to adhere to these internal policies (P12).

Finally, one participant iterated that, there are a number of existing internal policies in place especially with the use of ICT in students' information management. These policies have been in place for quite some number of years now. I have been working here for the past 12 years and most particular among these policies if the privacy policy even in the face of the introduction ICT in students' information management.

Leveraging on the above views of the participants held on the existing Internal policies related to the use of ICTs for students' information management in Accra Technical university of Ghana. The findings are at parity with the findings of Guma, et al., (2013) who stated that, to complement some administrative policies on students' information management, Higher Education institutions have learnt to leverage on potentials of ICT usage and integrated them into some of their administrative internal policies such as not limited to their Privacy Policy, Data Collection Policy, Health Information Collection Policy, Admission Policy, Awards of Grades Policy, Records Management Policy, ICT Software Management Policy, ICT Security Policy, ICT Usage Policy and ICT Training and Development policies

Research Question 2: the types of ICTs platforms used for students' information management in Accra Technical university of Ghana.

Types of ICTs platforms

The findings of the study revealed that, Accra Technical University adopts the following ICT platforms in students' information management, they include, Learning Management systems (LMS) which is a platform that provides the students with tools and resources for learning.

The Learning Management systems (LMS)

The Learning Management systems (LMS) has a feature for grading and assessment portfolios and portals where students are able to monitor their grades and performance. A further probe revealed that, Accra Technical University also uses the Student Information Systems (SIS) which is a software platform system designed to manage students' data such as grades, personal information, activities and tracking students' progress.

School Management Information System (SMIS).

Additionally, most participants also mentioned that, Accra Technical University also uses the School Management Information System (SMIS) or platform to manage students' information. It was further revealed that, this system is comprehensive system for managing or platform for managing various administrative activities like payment of fees, enrolments, student data, students' transition and dropout rates just to mention a few.

Electronic Portfolios (e-portfolios)

Subsequently the findings revealed that, Accra Technical University also uses Electronic Portfolios (e-portfolios) an online platform which allows students to collect and showcase their academic work such as art works, videos, recording, etc. This very system is usually used at the fashion and Visual Arts departments.

Student Response System (SRS)

Finally, the participants mentioned that, Accra Technical University adopts the Student Response System (SRS) also an online system which allows students to leave and air out their grievances. This system has been incorporated into their students' portal system where they can lodge their complaints on their grades etc.

The findings on the types of ICTs platforms used for students' information management in Accra Technical university of Ghana. Is at par with the study of Durnali, (2013), who mentioned that Learning Management systems (LMS), Student Response System (SRS), Electronic Portfolios (e-portfolios), School Management Information System (SMIS) and Social Learning platforms are the major ICT platforms many educational institutions

including Higher Educational Institutions use in the management of students' information. However, a comparison of this findings on the ICT platforms adopted by Accra Technical University to that of Durnali, (2013), revealed that Accra Technical University does not use Social Learning platforms in the management of its' students records and information. Consequently, the findings of this study is as well similar to the findings of Martins, et al., (2019).

The following Excerpts were captured from participants from the interview sessions.

> *"We have about four (4) ICT systems in place for the management of students' information. Among them are the e-portfolios which is mostly used by the fashion department, the School Management Information Systems, Learning Management systems (LMS), Student Response System (SRS) and Social Learning platforms which is the main information management system for the school and some other departments have their information management systems as well" (P13).*

Research Question 3: the role ICTs in students' information management in Accra Technical university of Ghana.

On the role of ICT in the management of students; information at Accra Technical University, the findings of the study revealed a number of significant roles ICT plays in students; information management. Most participants indicated that, ICT helps in student data management and

collection, improves speed and accuracy and task accomplishments by administrators, enhances diversity in terms the use of different ICT tools in students' information management and creates room for proper documentation and information security. This finding is at par with the study of Büyükbaykal, (2015) who mentioned that, the use of ICT in records management has resulted in enhanced speed, accuracy, diversity, flexibility, and detailed and comprehensive procedure documentation.

Further, the participants on the majority also asserted that, the use of ICT in students' information management saves time, storage space, gives room to administrators to undertake other tasks and minimizes errors in data collection and management and minimizes data losses. This aligns with the research findings of Mbachu (2015) who acknowledges that, the use of ICT systems in students' information/records management has resulted in space savings because most information can be filed electronically, lowering the danger of a loss. Staff who use ICT in record generation and storage experience improved storage, retrieval, access, usage, improved security, improved preservation, improved communication, and enhanced record generation.

Moreso, most of the participants stated that, ICT usage in students; information management helps in access to data, informs decision making and serves as an avenue for the stock of students" information for future use. This finding aligns with the study of Allison & Otuza claim that (2017) who said that, Access to information is not only a requirement for successful governance, but it is also a fundamental human right that underpins all other rights. Hence, the link between good records management and adequate

information freedom is crucial. As a result, institutions must develop a workable institutional structure as well as the ability to govern, promote, and improve information gathering, preservation, and utilization of students' records.

Excerpts from the participants revealed the following:

> *I have been working as an administrative staff in this University from the past 9 years and have been rotated on the job from different departments, through to faculties and units and I must say, the use of ICT is very helpful to task accomplishments so far as student records management is concerned. At a point dating back, we had to pull out several files in search of documents of past students who come back for documentation and they end up been disappointed"* (P12).

> *"The use of ICT in student information management has reduced our work load significantly. At first when the student online portal was not introduces, it takes about two (2) to three (3) months to accomplish student registration when school resumes. At time dur to pressure, we make a lot of mistakes, make omission and some unpardonable mistakes which goes against our practice"* (P9).

> *"I have an accounting staff here and for a couple of years now where the unit has gradually, transitioned from paper*

documentation to paperless or digital use of ICT resources, financial losses and imbalances in our operations and balance sheets has significantly reduced and improved" (P6).

"Tracking students' academic progress and transition has previously been a banter to us. we had to move from department to department collecting data and academic records of students for compilation especially prior to graduation periods. We struggled a lot to ensure all students are rightfully graduated. At times during awards, we find it difficult to identify the awardees from the various departments as well as the overall best students. However, the inception of ICT for administrative purposes has really improved our deliverables. For instance, the student's portal system is able to generate the data on the overall best student for the entire university" (P3).

"The role of ICT in students' information management cannot be underestimated and overemphasized. it really saves us a lot of time and stress, it reduces our workload, speeds up the entire process and helps in effective and efficient records management and data security" (P1)

Leveraging on the views of the participants on role of ICT in students; information management, their views are comparable to that of Mohamed, et al., (2018) ICT infrastructure such as word processors, electronic databases, e-mails, and management information systems may help students and academic records be communicated and managed more efficiently. Subsequently, ICT usage goes a long way toward making these records more convenient, useful, and practical and assists administrators in the promotion and preservation of higher-quality output over time than manual activity. It also saves money, time, and labor while increasing productivity and fecundity (Nwaomah, 2015)

Assess the challenges mitigating the use of ICT for students' information management in Accra Technical university of Ghana.

The findings of the study further revealed that, while the use of ICT has significantly improved students' information management at Accra Technical University, there a number challenges mitigating the use of ICT in students' information management.

ICT usage

Most participants indicated that, the major challenge to ICT usage in students' information management has to do with the inability of some administrators to adapt to the use of some of the ICT tools. Similarly, Azameti and Adjei, (2013), stated that, a lack of primary education and ICT skills may provide a challenge to record management since many academic and non-academic employees who should be using ICT facilities are not computer literate and hence overlook the benefits of ICT in record administration. Addy & Ofori-Boateng (2015) mentioned that, ICT programs in these institutions are not tailored to the local situation, and as a result, there is a gap between

design and reality, which is referred to as the technological frontier. Furthermore, Ghana's low use of ICTs in addressing service delivery in the public and private sectors is due to issues related with workforce characteristics defined by a poor professional, technical, and managerial workforce base. (Asogwa, 2013).

Inadequate ICT Resources

Additionally, the participants revealed inadequate ICT resources and installations as another key challenge that mitigates ICT usage in students' information management. This affirms the findings of Lemieux et al. (2014) who posits identified inadequate installation of ICT-related infrastructure, intermittent electrical supply, and a lack of maintenance culture as problems influencing ICT usage in the management of students' information. Consequently, Katuu, (2015) stated that, one key challenge in the application of ICT for students' information management include a lack of basic and adequate infrastructures and/or resources, such as the lack of basic and satisfactory physical amenities, such as space for computers with internet connectivity, generators, and adequate equipment.

Power Fluctuation and Unstable Internet Supply

Most participants indicated that, power fluctuation and unstable internet supply is a major challenge that mitigates the operations and use of ICT in students' information management. In a similar vein, Abdulkareem et al., (2013), the slow evolution of various characteristics of ICTs, such as the Internet, in several African countries is mostly due to insufficient scientific and financial management, as well as other incompetence on the side of the telecoms arena has negatively impacted ICT usage.

Financial Constraints

The findings of the study revealed that, some of the participants stated that, financial constraints are one of the major challenges that mitigates the use of ICT in students' information management in schools. This affirms the findings of Azameti and Adjei, (2013) who stated that, many people are unable to purchase ICT facilities due to their high cost. This makes using these facilities for record management challenging. As a result, financial support is critical for the successful installation and integration of ICT for student data management.

Perceptions of Some Administrative Staff

Finally, most participants indicated that, the perceptions of some administrators of the university towards ICT usage in students' information management has mitigated and presented a key challenge to information management. In this regard, this finding conforms with that of Mondal, & Mete, (2012) who stated that, several of employees including university administrative staffs have conservative mindsets and continue follow old practices, making change difficult.

Some excerpts from the study revealed that:

> *"There is the need to address these challenges especially with the inadequacy of the ICT resources and its usage which is a major challenge to many of the administrators of this institution. Hence if this problem of inability to use ICT resources and the inadequacy of these resources are not resolve, they will continue to defeat the purpose of*

transiting from paper to paperless information management of students; data" (P7*).*

The view of participant 7 is at par with the findings of Pegu, (2014) who postulated that, any genuine improvement in the education industry requires the use of ICT for information management. as a result, if the underlying difficulties of ICT are not solved, using ICT systems in record administration may be ostensibly problematic.

"Although the university has migrated onto ICT usage in the management of students' information, most individuals and administrators are still struggling with usage. Although a number of training sessions have been held to improve practice and usage" (P11).

The findings of this study are in line with that of Mondal, & Mete, (2012), who mentioned that, Institutions in most countries, are still in the early phases of ICT adoption, with sporadic and disorganized provision and application which impacts practice. Addy and Ofori-Boateng (2015) mentioned that, ICT programs in these institutions are not tailored to the local situation, and as a result, there is a gap between design and reality, which is referred to as the technological frontier. Furthermore, Ghana's low use of ICTs in addressing service delivery in the public and private sectors is due to issues related with workforce characteristics defined by a poor professional, technical, and managerial workforce base. (Asogwa, 2013)."

> *"One major problem facing the use of ICT in students' information management is the poor maintenance culture. Just take a look around and see the number of damaged and neglected computers which could be serviced. However, the key challenges here is maintenance and repairs. we have done a number of follow ups as a department but has yielded no fruits and proven futile (P5).*

Strategies that will harness the use of ICTs for students' information management in Accra Technical university of Ghana.

On the strategies to put in place to mitigate and manage the challenges that confirm the use of ICT the findings of the study revealed that:

Continuous Training and Development Programs on ICT Usage

Most participants proposed the need for continuous training and development programs on ICT usage in the student's information management as ICT usage and tools keeps evolving. This aligns with the findings of, who stated that, any genuine improvement in the education sector requires the use of ICT in information management. As a result, if the underlying difficulties of ICT are not addressed, using ICT systems in record management and continuous trainings to abreast administrators with the requisite ICT skills and competences, it could be troublesome (Pegu, 2014).

Stakeholder Engagement

Further, the participants added that, stakeholders (government, old students, donors, partners, benevolent individuals and organisations in the society) should come to the aid of the school in supply of ICT resources and installations to help in addressing the problem of inadequacy.

Perceptual Change

A further probe further revealed that, university administrators of Accra Technical University should change their perceptions, minds and thoughts on the use of ICT in students; information management and embrace the new normal of ICT usage in students' information management. This affirms the proposition of the theory of planned behaviours and the **Technology** Acceptance Model (TAM). According to the Davis (1989) who developed the Technology Acceptance Model (TAM), users must embrace technology (in this case, ICT integration in university administration) and change their attitudes, behavior, beliefs, perceived ease of use, and perceived utility toward utilizing new technology. Further, The Theory of Planned Behaviour (TPB) claims that key beliefs influence behavioral intentions and subsequent behavior (Ajzen, 1991). In this regard, the perception of control people on tasks accomplishments negatively or positively impacts outcomes.

Chapter Summary

This chapter has presented data gathered from the study using a semi-structured interview guide Discussion of the results have been done in relation to the research questions that guided the study and have been compared to previous literature and works of other researchers to draw the common findings and difference in findings also in other to explore the views of the participants on the Use of Information Communication Technology for Students' Information Management at Accra Technical University of Ghana, identify problems that impacts usages and how best to improve ICT usage in the management of students' information in Accra Technical University of Ghana.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter presents a summary of the study findings, discussions, conclusions and recommendations. It also makes suggestions for further research. The findings are summarized in line with the objectives of the study which was to identify the use of information communication technology for students' information management in Accra technical university of Ghana.

Summary of the Study

The 21st century is marked by technological advancements that have transformed several aspects of lives and the mode of operations in both small and multinational institutions. Higher educational institutions have not been left behind, with the introduction of cutting-edge technologies the management of student information has experienced tremendous improvements enhancing data accuracy and providing students an easy access to their information. This notwithstanding, some higher institutions have not effectively utilized rapid technological advancements in the management of information in their institutions (Asogwa, 2013).

Prior to the transitioning of polytechnics to technical universities in Ghana, these institutions were reported to be using manual systems to manage student information (Frimpong et al., 2018). Hence, this study aimed at investigating the use of Information Communication Technology in students' information management at the Accra Technical University of Ghana. In view of the above, the following research question were developed to identify the internal guidelines for Accra Technical University in Ghana's usage of ICTs

for student information management, examine the several ICT platforms employed at Accra Technical University for student information management, asses the use of ICTs in students' information management at the Accra Technical University, explore the challenges that mitigate the use of ICT in students information Management at the Accra Technical University of Ghana as well as recommend strategies to improve the use of ICT in the management of students' information at Accra Technical University.

The researcher adopted the qualitative methodology and the explanatory-descriptive research designs. A total of 13 participants (Administrative staffs) Accra Technical University of Ghana participated in the study. A semi-structured interview guide was used to poll the views of the participants. The interview data was thematically analysed.

Demographic Characteristics of participants

The study reveled that, both sexes were fairly represented in the study.

Working Experience of Participants

The findings of the study revealed an average of 36years among the participants sampled for the study

Educational Qualification of participants

The findings of the study revealed that, the minimum and maximum qualification among the sampled participants are HND and Mphil respectively.

Key Findings

The purpose of this study is to assess the use of ICT in students' information management at the Accra Technical University of Ghana. Levraging on the outcomes of the study:

The first research sought to identify the internal guidelines for Accra Technical University in Ghana's usage of ICTs for student information management. Findings from the study revealed that the Accra Technical University has several internal guidelines and policies that regulate information management in the institution. Privacy Policy, Data Collection Policy, Health Information Collection Policy, Admission Policy, Awards of Grades Policy, Records Management Policy, ICT Software Management Policy, ICT Security Policy, ICT Usage Policy and ICT Training and Development policies are the major internal information policies identified.

Further, findings from the study also revealed the types of platforms utilized at Accra Technical information for the management of students' information. The key platforms identified include learning management systems; this platform is used to provide students with resources for learning. Participants also identified a Student Information System which is designed to manage student academic and personal data. Other platforms identified for student information management at the Accra Technical University include the School Management Information Systems, Electronic Portfolios, and the Student Response System online platform.

The third research objective aimed to identify the role of ICT in student information management at the Accra Technical University. The study revealed several roles of ICTs at the Accra Technical University; key amongst them is that ICTs enhances the speed and accuracy of collection and management. Additionally, several participants stated that the use of ICTs in student information management saves time, storage space and gives room to the administrators to undertake other tasks and minimizes error in data

collection and management. The use of ICT systems in information management also minimizes data losses.

Some participants also asserted that the usage of ICT in student information management makes accessing data easy, it informs decision making and serves as a means of storing data for future use.

Evidently, the use of ICTs for student information collection and management at the Accra Technical Universities has significantly enhanced students' information management. This notwithstanding, there are some challenges that adversely affect the use of ICTs in students' information management. A major challenge identified by participants is the inability of administrators to adapt to ICT tools. The lack of personnel that have the requisite skills to utilize ICT tools in the collection and management of information causes departments responsible for information management to overlook the usefulness of ICTs in information management.

Another key challenge identified is the unavailability of ICT resources and installations that are needed for information management. Participants are of the view that, the Accra Technical University lacks the necessary ICT tools that are needed for student information management, causing administrators to use manual systems or outdated technologies. Other challenges that affect the use of ICTs in students' information management include power fluctuation, unstable internet supply and the perceptions of some administrators of the university towards ICT usage in students' information management. Finally, the cost of ICT tools used for information management makes it difficult for higher education institutions to purchase these tools.

Lastly, the fifth research objective was to identify strategies that can be used to explore the use of ICTs for students' information management at the Accra Technical University. Participants proposed strategies such as continuous training and development programs on ICT tools used for students' information management. This will ensure that administrators responsible for managing students' information are always knowledgeable in emerging information management as ICT usage and tools.

To ensure that financial constraints do not prevent the use of ICTs for information management in higher institutions, participants stated that stakeholders such as the government, old students, donors, partners and benevolent individuals should come to the aid of the school to supply ICT resources and installations to help in addressing the problem of inadequacy. Finally, participants stated that it is essential for university administrators of Accra Technical University to change their perceptions, minds and thoughts on the use of ICT in students; information management and embrace the new normal of ICT usage in students' information management.

Conclusions

The following conclusions were made based on the findings of the study;

The Accra Technical University has several policies and guidelines put in place to regulate the collection and management of students' information. This proves that the university recognizes the need to record and store student information.

Also, their use of several ICT platforms to manage and collect student information shows their understanding of the role ICTs play in recording and

storing data. However, these guidelines have not necessarily enhanced the usage of ICT tools at the Accra Technical. This can be associated with the challenges that mitigate the use of ICT tools in the university.

It can also be concluded that the Accra Technical University has made laudable efforts in the use of ICT for collecting and managing students' information. Whiles findings of the study revealed that this has improved efficiency in the collection and management of student information; the university is faced with some major challenges including financial constraints and lack of skilled personnel that has not allowed the Accra Technical University to fully explore the usage of ICTs tools in information management.

Finally, Accra Technical University does not invest in training their staff on emerging ICTs used for information management resulting in the use of outdated technologies and even manual means of collecting and storing data. This attitude of the management to some extent also speaks about the importance that the university places on using ICTs for information management.

Recommendations

The following recommendations were made based on the findings of the study.

Firstly, the Accra Technical University of Ghana should invest in training staff responsible for the management of students' information on emerging ICT tools used for information institutions. This will ensure that staffs are up to date with technological advancement in the field of information collection and management.

Secondly, it is recommended that the Accra Technical Universities invest in hardware and software that allow them to have uninterrupted power supply and in ICT tools that provides them with stable internet connection.

Additionally, it is proposed that the Accra Technical University communicate with major stakeholders and relevant government institutions to seek for financial aid in relation to acquiring ICT tools for information management. Also, it is recommended that the Accra Technical University accommodate the financial needs of using ICTs for information management in the university's financial budget.

Finally, it is recommended that the Accra Technical University allocate resources for research and development initiatives focused on improving the use of ICTs for students' information management. The university can also encourage students to conduct research on emerging technologies in information management.

Implications

Findings of this research provide useful implications for the use of ICTs for student information management in the Accra Technical Universities and higher educational institutions in general. The importance of ICTSs in information management is taken from the fact that these technologies make information collection and management easier.

Most importantly these technologies ensure that data collected is easily accessible and information can be stored for a longer period as compared to manual means of recording information. Thus, this research has emphasized the need for ICTs in students' information management in higher institutions in Ghana. Furthermore, by harnessing findings and recommendations from

this study, the Accra technical university may be able to improve the usage of ICTs in students' information collection and management.

Finally, this research also reveals the importance of investing in educational programs about ICTs in information management and the need to invest into researching about the evolving technologies in information management.

Suggestions for Further Research

Based on the gaps in literature that was identified in the course of undertaking this research, the following recommendations were made for further research.

All higher institutions in Ghana collect and manage students' information. However, there is very little on the types of information technologies available and how they enhance information management in higher institutions in Ghana. Thus, it is essential for research to be carried to identify emerging technologies in information management and how higher institutions have used these technologies to enhance information management.

Findings from the research also revealed that the Accra Technical Universities, utilizes ICT platforms for activities such as student's registration of courses information and the recording of grades. Thus, the researcher is suggesting that a study be conducted into how such platforms have simplified operations of the university and how this has aided the monitoring of student's performance and how the data gathered from these platforms can be uses to improve student's performance.

Finally, while ICTs are useful for data management privacy and security of data collected is of great concern. Thus, a study to explore the

privacy and security implications of managing students' data in higher education institutions and which measures can be put in place to ensure privacy and security in student information management.

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APPENDICES

APPENDIX A

INTERVIEW GUIDE

UNIVERSITY OF CAPECOAST

INSTITUTE OF EDUCATIONAL PLANNING AND ADMINISTRATION

The objective of this interview guide is to collect data from participants on to the **Use of Information Communication Technology for Students' Information Management at Accra Technical University of Ghana**. Please carefully read the items and provide response that best represents your opinion. Your confidentiality is however ensured.

Consent to Participate in Research:

I understand that any information I share will remain confidential and that when the results of the research are published or discussed in conferences, no information will be included that would reveal my identity. By agreeing to continue with the survey and submit a response to the researcher in question, I am giving consent to participate in this study. you are as well entitled to a diary and a pen after participating in the study.

I consent to participate in this survey: Yes No

SECTION A: DEMOGRAPHY

Interview No.: _____

Date/Time: _____

Interviewee: _____

Department: _____

Sex: _____

Age: _____

SECTION B

1. Which of the following internal policies are related to the use of ICTs for students' information management in Accra Technical university of Ghana?

i. Privacy Policy [ ]

ii. Data Collection Policy [ ]

iii. Health Information Collection Policy [ ]

iv. Admission Policy [ ]

v. Awards of Grades Policy [ ]

vi. Records Management Policy [ ]

vii. ICT Software Management Policy [ ]

viii. ICT Security Policy [ ]

ix. ICT Usage Policy [ ]

x. ICT Training and Development [ ]

xi. Others .....

2. Outline the types of ICTs platforms are available and used for students' information management in Accra Technical University of Ghana.
3. What is your candid opinion on the use of ICT in students' information management at Accra Technical University of Ghana?
4. Which kind of database infrastructure should be employed to manage students' information at Accra Technical University of Ghana? Reason for the choice.....
5. A. What kind of software development programme will you recommend for management of students' information at Accra Technical University of Ghana?

a. In-house [ ]

b. Outsourced [ ]

c. Any Other.....

B. Why the choice of the software development programme?

C. How effective are these programmes?

6. Which technology do you think will better serve the management of students' information at Accra Technical University of Ghana? Why.....

a. Web. Application [ ]

b. Desktop Application [ ]

c. Mobile Application [ ]

7. Which storage system will you prefer using ICT for managing students' information at Accra Technical University of Ghana?

a. Cloud base [ ]

b. In-house storage [ ]

c. Off-site storage [ ]

d. Other .....

8. What role does ICTs play in students' information management in Accra Technical University of Ghana.

9. What are the challenges mitigating the use of ICT for students' information management in Accra Technical University of Ghana?

10. Recommend strategies that will harness the use of ICTs for students' information management Accra Technical University of Ghana.

Thank You for your cooperation!!!

APPENDIX B

INTRODUCTORY LETTER

IEPA
Institute for Educational Planning and Administration at University of Cape Coast, Ghana

University of Cape Coast Ghana.

unesco
Centre
Under the auspices of UNESCO

Our Ref.: IEPA-UNESCO /1.2/VOL.1/0126

12th July,2022

The Chairman
Institutional Review Board
UCC

Dear Sir,

REQUEST FOR ETHICAL CLEARANCE — AKWETEY FREDA AWONAKIE (EO/HET/21/0007)

We write to introduce to you Miss. Akwetey Freda Awonakie, with registration number **((EO/HET/21/0007)** an MPhil student pursuing Administration in Higher Education.

We wish to inform you that the Institute has approved Miss. Akwetey Freda Awonakie's research proposal.

We would be grateful if ethical clearance could be granted to her to collect her data. Her research topic is: **"The use of Information Communication Technology in Students Information Management at Accra Technical University of Ghana".**

Kindly find attached a copy of her proposal for your perusal.

Counting on your usual support.

Thank you.

Yours faithfully,

Mrs. Alberta A. K. Owusu
AG. DEPUTY DIRECTOR-GENERAL (ADMIN.& GEN. SERVICES)
For: DEPUTY DIRECTOR-GENERA (ACADEMIC PROGS. & PROFESSIONAL DEV'T)

CC: MISS. Akwetey Freda Awonakie, IEPA

July 09, 2022

The Board Chair,
Institutional Review Board
University of Cape Coast
Cape Coast

Dear Sir/Madam,

APPLICATION FOR ETHICAL CLEARANCE

I write to apply for ethical clearance for furtherance of my thesis dissertation. My details are as follows:

NAME: AKWETEY FREDA AWONAKIE

REGISTRATION NUMBER: EO/HET/21/0007

THESIS TITLE: The Use of Information Communication Technology in Students' Information Management at Accra Technical University of Ghana.

In view of this, I would appreciate your prompt assistance in processing my application since it is essential in fast tracking my research work. Please find enclosed herein following documents with regard to protocol for review.

It is my hope that, my request is given the needed attention and granted.

I count on your usual cooperation

Thank You.

Yours faithfully,

Akwetey Freada Awonakie.

(0547207643)

Institute of Educational Planning and Administration.

University of Cape Coast

Cape Coast

14th July, 2022.

The Chairman,

Institutional Review Board

University of Cape Coast

Cape Coast

Dear Sir,

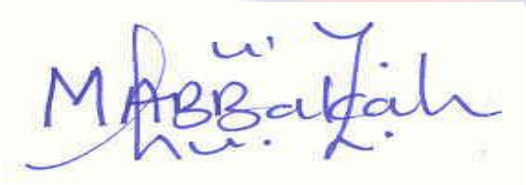
REQUEST FOR ETHICAL CLEARANCE – FREDA AKWETEY AWONAKIE

I, as the principal Supervisor of Freda Akwetey Awonakie, write in support of her application to the Institutional Review Board for ethical clearance to enable her proceed with the collection of data for the completion of her thesis for the award of MPhil (Educational Administration).

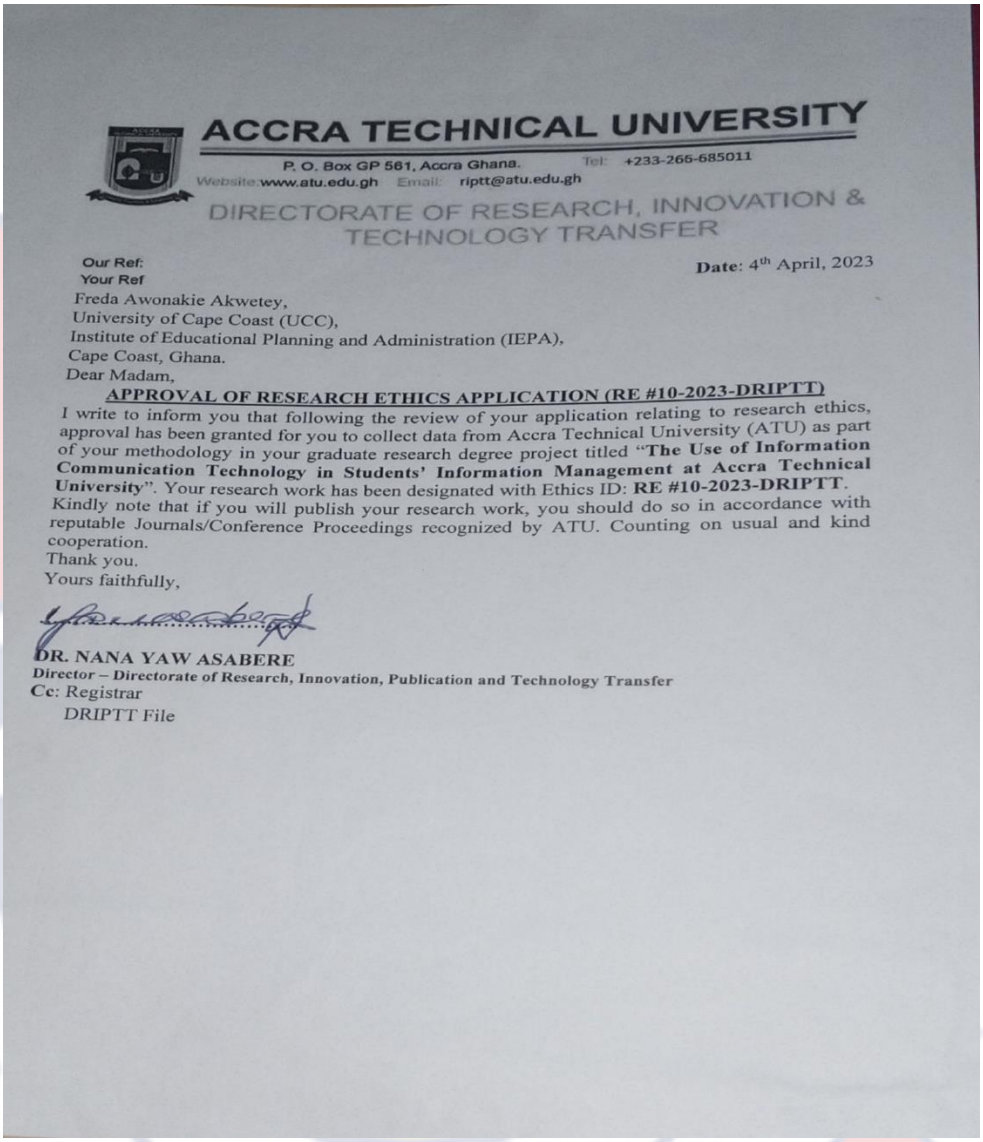
Freda is second year MPhil student of the Institute of Educational Planning and Administration. She has successfully defended her proposal and is currently at the data collection stage of her thesis entitled "The Use of Information Communication Technology for Students' Information Management in Accra Technical University of Ghana."

I hope her quest will meet your kind consideration.

Yours faithfully,



Prof. Marie Afua Baah Bakah



ACCRA TECHNICAL UNIVERSITY

P. O. Box GP 561, Accra Ghana. Tel: +233-266-685011
Website:www.atu.edu.gh Email: riptt@atu.edu.gh

DIRECTORATE OF RESEARCH, INNOVATION & TECHNOLOGY TRANSFER

Our Ref:
Your Ref

Date: 4th April, 2023

Freda Awonakie Akwetey,
University of Cape Coast (UCC),
Institute of Educational Planning and Administration (IEPA),
Cape Coast, Ghana.

Dear Madam,

APPROVAL OF RESEARCH ETHICS APPLICATION (RE #10-2023-DRIPTT)

I write to inform you that following the review of your application relating to research ethics, approval has been granted for you to collect data from Accra Technical University (ATU) as part of your methodology in your graduate research degree project titled "**The Use of Information Communication Technology in Students' Information Management at Accra Technical University**". Your research work has been designated with Ethics ID: **RE #10-2023-DRIPTT**.

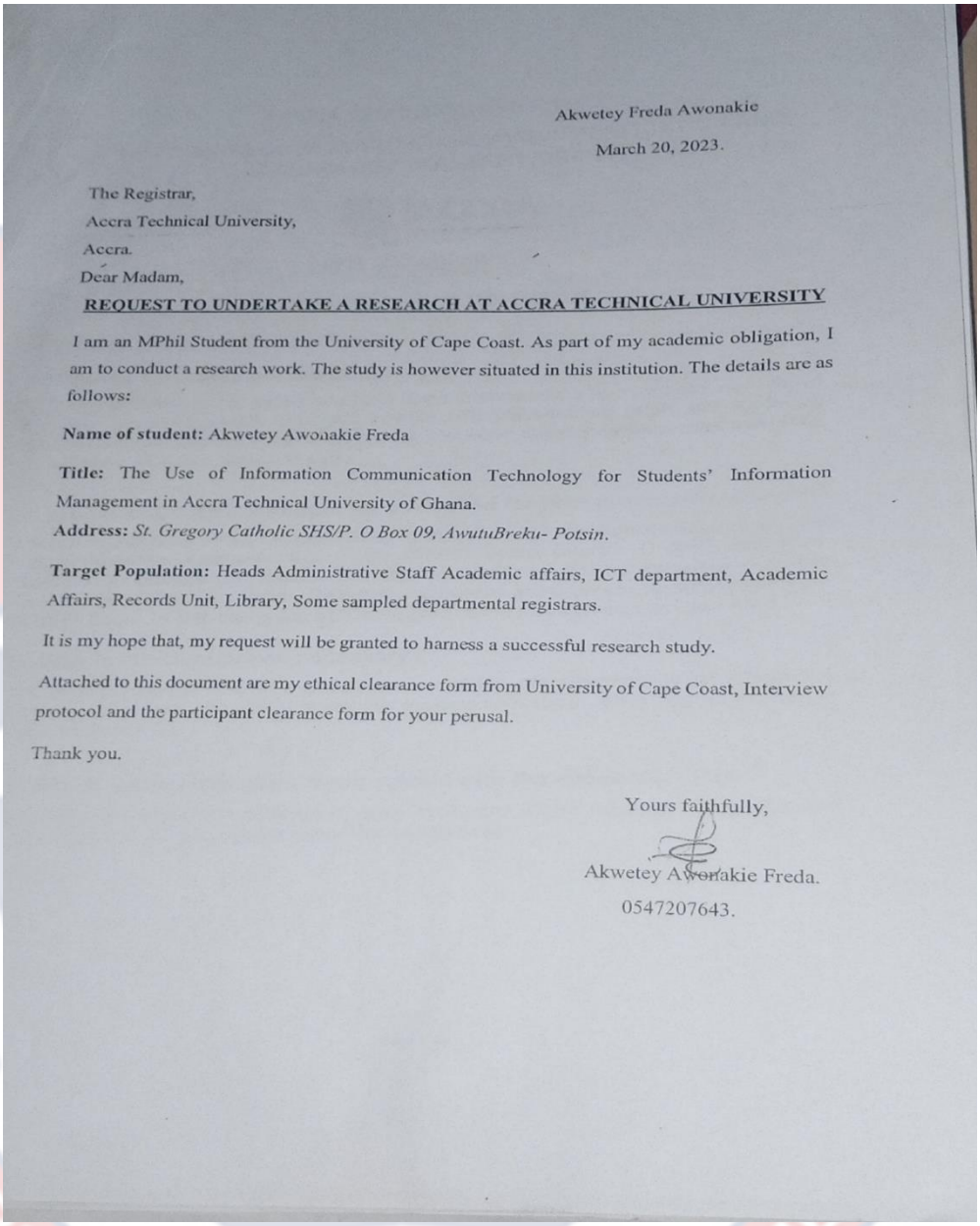
Kindly note that if you will publish your research work, you should do so in accordance with reputable Journals/Conference Proceedings recognized by ATU. Counting on usual and kind cooperation.

Thank you.

Yours faithfully,

DR. NANA YAW ASABERE
Director – Directorate of Research, Innovation, Publication and Technology Transfer

Cc: Registrar
DRIPTT File



Akwetey Freda Awonakie

March 20, 2023.

The Registrar,
Accra Technical University,
Accra.

Dear Madam,

REQUEST TO UNDERTAKE A RESEARCH AT ACCRA TECHNICAL UNIVERSITY

I am an MPhil Student from the University of Cape Coast. As part of my academic obligation, I am to conduct a research work. The study is however situated in this institution. The details are as follows:

Name of student: Akwetey Awonakie Freda

Title: The Use of Information Communication Technology for Students' Information Management in Accra Technical University of Ghana.

Address: *St. Gregory Catholic SHS/P. O Box 09, AwutuBreku- Potsin.*

Target Population: Heads Administrative Staff Academic affairs, ICT department, Academic Affairs, Records Unit, Library, Some sampled departmental registrars.

It is my hope that, my request will be granted to harness a successful research study.

Attached to this document are my ethical clearance form from University of Cape Coast, Interview protocol and the participant clearance form for your perusal.

Thank you.

Yours faithfully,

Akwetey Awonakie Freda.
0547207643.